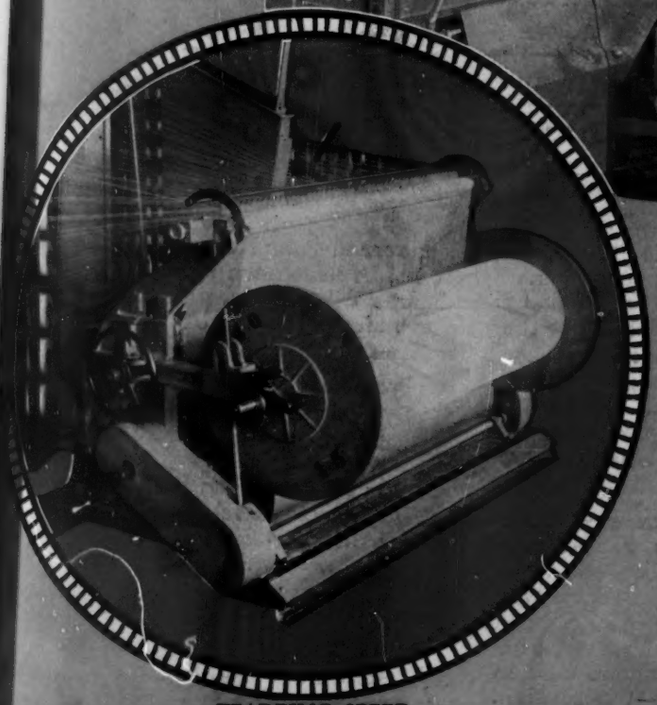
JULY, 1929

COTTON

The Textile Manufacturing Journal



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Volume 93.
Number 9.
Fifteen cents a copy.

KING COTTON THRIVES ANEW

SIX MONTHS RECORD

Spindlage in Textile Industries Cotton Division

from the United States Census of Manufactures

	Estabs.	Spinning Spindles			
		In Place Sept. 1928	Active During March 1929	Active During Sept. 1928	Increase during last 6 months
United States	1,366	35,507,470	31,103,998	28,227,090	2,876,908
Cotton Growing States	809	18,534,680	18,097,420	17,713,716	383,704
New England States	332	15,429,210	11,701,884	9,284,008	2,417,876
All Other States	225	1,543,580	1,304,694	1,229,366	75,328

...New Methods Bring New Prosperity to the Cotton Industry

KING COTTON thrives anew. The cotton industry is booming. The excerpt from U. S. Census of Manufactures reprinted at the right shows a healthy turn of affairs, a steadily growing prosperity in the cotton industry.

This chart reflects the new prosperity of the entire cotton industry. Reports indicate operations at better than 109% single shift capacity. Individual states add their testimony. Up in Massachusetts, down in Alabama, from Connecticut, Maine and South Carolina, for instance, comes news of more spindles in operation, and working longer hours.

Yes, the cotton industry is enjoying new prosperity . . . and new methods are doing their share to bring about this happy state of affairs. Manufacturers are adopting newer, more up-to-date ways. Manufacturers are advertising. Manufacturers are learning the wisdom and value of branding their fabrics.

The branded fabric, they find, protects them against substitution. It establishes a permanent demand for their goods. It identifies the genuine with the buyer. And the buyer, *accustomed to buying by brand identification in other fields,* is showing a marked preference for branded cotton fabrics as his assurance of quality.

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July, 1929

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An Addition *for* Appleton

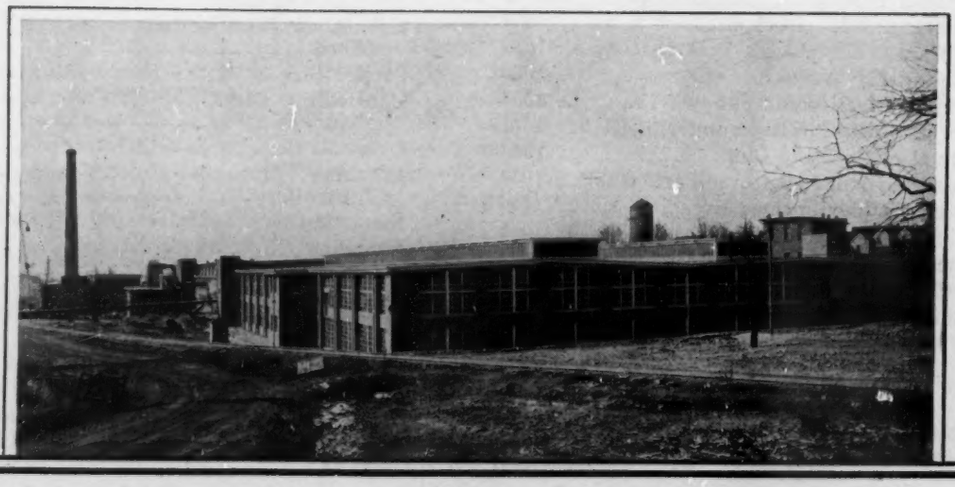
WHEN the Appleton Company purchased the plant of the Brogon Mills at Anderson, South Carolina, they made a beginning in the South. Some improvements and additions were made at that time in order to adapt the equipment to the slightly changed requirements and to better production facilities.

That operation has been successful is evidenced by the recently completed addition which we designed for this Company to double the size of the mill. There are now a total of approximately 60,000 spindles and 1750 looms producing cotton flannels and sheetings.

J. E. SIRRINE & COMPANY

Engineers

Greenville South Carolina



ENGINEERING CONSULTANTS ON THE SOUTH

COTTON

Vol. 93 July, 1929 No. 9

The Delusion *of* "Low Cost"

By H. R. Fitzgerald

UNANIMOUSLY, those attending the Atlantic City convention styled the address of President H. R. Fitzgerald a masterful analysis of conditions and an inspiration. The accompanying abstract of it is presented for the thoughtful study of our readers who were not present at the convention, and we recommend it for its logical discussions of the present textile situation and the reasons attributing to current conditions.---The Editor.

NOTWITHSTANDING our many advantages, the industry as at present conducted is not prosperous. No industry can long survive without reasonable and legitimate profits: it is the lifeblood that must pulsate freely through the veins if strength is to be maintained and the demands of progress met. We are told that our nation as a unit has attained the most advanced economic position ever reached by any people. That the first quarter of this year 1929 has broken all previous records in production and profits by several of the major industries. That in spite of the almost universal complaint of subnormal demand for textiles, the movement in some lines has been larger than ever before. If the census figures are correct as given out by Mr. Pickard, the production for 1927 exceeded by approximately three-quarters of a billion square yards the previous highest output in the history of the industry. We are told that the rate of production for the first quarter of this year is approximately 111 per cent of full, day-run capacity . . . and yet the industry as a whole is not making any money!

May I ask you, then, a candid question? Do we lack the element of good management that enabled our predecessors to win the distinguished success, the fruits of which they bequeathed to us? Is there something about our present system that, in spite of any effort we can make, is dissipating our energies and bleeding out plants to death? Is it an accepted fact that because we have a potential capacity for production somewhat in excess of normal consumption, we must therefore turn out every pound that we can produce, regardless of the consequences? If that is the case, it seems to me that we stand indicted before the world for a type of incompetence that will deserve its fate.

Retiring President Fitzgerald.

The most insidious delusion contributing to this particular question is that of the so-called "low-cost operator." By this I do not at all refer to the progressive manufacturer who, by improved methods and equipment and ever-increasing efficiency, is constantly striving to lower his costs in a legitimate way and having due regard for quality and workmanship; my reference is to an entirely different type of manufacturer.

Ignoring the fact that practically the same engineering, the same machinery builders, the same textile schools for technical training, the same raw materials and almost the same everything else that enters into the cost have long ago dissipated the "secret advantages"—except for variations in wage rates and the difference in the abilities of management—the "low-cost operator" flatters himself that he can beat the game by splitting hairs more dexterously than others, and as a rule is not even willing to standardize his cost methods to discover whether or not he is operating at a legitimate profit. His philosophy is to run the plants all the time and produce every pound that he can, and sell the goods at what the market will pay. He thinks that whatever curtailing is necessary should be done by others less favorably situated than himself.

Now, in what respect is he more favorably situated than others? In so far as low labor costs and exemption from burdensome taxes may contribute to this delusion, I do not regard these as in any sense permanent fixtures. The tax problem is coming more and more to the front, even in those states that have broadly advertised their liberality, and it is already a heavy burden upon many of our plants.

As to wage rates, there is nothing smart or commendable in any management that seeks to drive its cost down by lowering the stand-

ards of living of the operatives. There is a more sacred responsibility here than the mere question of eking out a meager profit. Those who are paying wage rates below a fair southern average are jeopardizing their own interest as well as that of the whole industry, and it is indeed a false security for them to assume that low cost derived from such a source is either tenable or justifiable. Furthermore, so soon as there occurs a sure enough "back-to-the-farm" movement, or any of several other contingencies that may arise, it will be discovered that the much-advertised "inexhaustible" supply of labor no longer exists.

It is this same gentleman, who styles himself a "low-cost operator," who feels that he cannot afford to co-operate with others in lifting the standard of ethics in the industry, and he is usually the price-cutter, because his policy is to run his plant all the time, and sell his goods at what the market will pay. The result of this philosophy is a vicious system which embodies the germ of the disease from which all have to suffer:

(1) The markets are kept unstabilized because of our failure to bring into alignment our production schedules with the demand. If you examine the statistics over a three or five-year period, you will readily see that it would have been just as easy (and far more profitable) to have done our curtailing before the market became overloaded, and thereby to have kept it in a sound and healthy condition, instead of going ahead blindly building up stocks to be sold at a loss. This sound practice would not have subtracted one particle from the total number of hours operated, or the total quantity of goods passed into consumption; on the contrary, there are many evidences that sound practice would add to, instead of diminish, the rate of consumption.

There are but few, if any, among the successful industries of the world that do not have a maximum capacity in excess of their normal demand. This is, of itself, no disadvantage, as it permits greater flexibility with which to meet a varying demand. But if they (like the textile industry) should ignore the rate of demand for their products and blindly run to the full extent of their capacity, they would suffer as we do from the instability of their markets and they would cease to number among the successful and well-managed industries.

(2) The pernicious evil of price-cutting is the outgrowth of the unstabilized or overloaded market. It is usually the result of teasing unwilling buyers to take goods that they do not want. It has produced a type of buyer that is now a perennial parasite, more destructive to stability than the boll weevil is to cotton. He is kept supplied with merchandise that he will only buy on a distress basis and with it he proceeds to knock the bottom from under every legitimate channel of distribution. The much-heralded phenomenal profits attributed to the scientific management of some of the modern distributing systems are in large measure the garnering that results from enormous volumes of goods, procured from the manufacturer on a distress basis—that is to say, at or below cost—the same goods, mind you, that could and should be distributed to the consumer without distress to anyone. In a recent issue of Forbes there was a clear and convincing article by James H. Warburton, entitled "Stop Dumping Goods at Cost," in which he describes the predicament of thousands of retail distributors and makes the following interesting comment: "The coming mass production and its twin—mass distribution—has brought on the greatest orgy of price-selling this country has ever seen. Consideration for quality has been all but cast to the birds. Hardly has a salesman presented a sample or picture of a product until the dealer asks, 'What's the price?' A perfectly natural question, to be sure, but so long as price is the foremost and largely the only point of interest for the dealer, he is going to sell price as well as buy on this basis. But very little creative selling has been done in recent years. Retail dealers are still parading price as the incentive to the consumer. They are trying their level best to 'out-price-sell' the purely price competition."

WAGE SCALES.

"As to wage rates, there is nothing smart or commendable in any management that seeks to drive its cost down by lowering the standards of living of the operatives. There is a more sacred responsibility here than the mere question of eking out a meager profit. Those who are paying ware rates below a fair southern average are jeopardizing their own interest as well as that of the whole industry, and it is indeed a false security for them to assume that low cost derived from such a source is either tenable or justifiable. Furthermore, so soon as there occurs a sure enough 'back-to-the-farm' movement, or any of several other contingencies that may arise, it will be discovered that the much-advertised 'inexhaustible' supply of labor no longer exists."

The question is often asked, where are our old-time merchants who so ably represented the products of our mills, and contributed so conspicuously to the success of this great industry? It is not fair to say that they are all dead. There are many capable, broad-minded men among the selling agencies, whose attitude is constructive, and who deserve great credit for such measure of stability as we have had. On the other hand, there are many others whose eagerness for self-interest apparently precludes the co-operative principle, and whose sole philosophy for meeting the new problems of today consists in following old methods that brought on our present troubles.

I am not unmindful that the solution of these problems is not as simple as "falling from a log;" that they cannot be rectified in a day, and the same language used by President Hoover in his message to Congress about the farm problem is applicable to this —that it belongs not to the realm of politics, but to that of economics. I also agree with my good friend Mr. Edgerton that "neither science nor philosophy has yet provided a substitute for common sense as the most reliable cure for any inorganic trouble."

President Hoover, in his inaugural address, made the following statements:

"The larger purpose of our economic thought should be to establish more firmly stability and security of business and employment, and thereby remove poverty still further from our borders. Our people

(*Continued on Page* 1034.)

Mistah President!

JUST about a quarter of a century ago, a rather important debate was scehuled for the Pullen Literary Society, at the North Carolina State College in Raleigh. The affirmative side lacked a representative to champion its cause, and a future governor of the State, then a student, met the emergency by securing the services of another boy, a student in the textile department of the school—training himself in the fundamentals of the industry which was to become paramount in the state's life.

This boy earlier had visions and ambitions in a sphere of life removed from that of cotton manufacturing. He had aspired to the legal profession. During his 'teens he had oft and long sat inspired by the fiery speeches of political candidates, dreaming of a career of legal and judicial training, and a service of administering justice in the affairs of mankind.

Perhaps that mental background, and manifestations of it in various phases of campus life, marked him as the logical pinch-hitter in the debate. At any rate, he accepted the responsibility, and determined to win, if possible. He studied his subject thoroughly, prepared what he considered a masterly presentation. The night came, and with it, an enthusiastic student-body audience and the judges, heavy-browed and sober-faced. The youthful orator arose, and for six pages of manuscript went fast and furious; but his mind lapsed. The end of page six failed to draw the cue for page seven. To one weak and poorly-prepared, this would have been a catastrophe, a complete forfeiture of the prize, but this lad, quick as a flash, picked up another point and extemporaneously drove it home; suddenly the cue came, on page eight of his prepared address, and with avidity he picked it up and went through to the finish. After the debate, the judges, so impressed by his presentation and subject matter that they did not sense what had happened, awarded the decision to the affirmative debaters, and the medal to this young man.

Thus did the forensic tendencies and abilities of Arthur Mills Dixon, the new president of the American Cotton Manufacturers Association, first come to light. Doubtless Max Gardner, now Governor of the Old North State, will recall this little incident at Raleigh, when he secured Dixon for the Pullen debate, as he notes with satisfaction that his college-mate has been elevated to the highest office of honor and distinction within the power of southern cotton manufacturers, as a body, to bestow.

Since these sketches are designed for historical record as well as to delineate the characteristics of the men attaining, each year, this signal honor, it is necessary here to set down some of the essential facts of Dixon's life and career.

Arthur was born in Gaston County, North Carolina, on May 2nd, 1882. It may be said, in passing, that excepting a brief absence during his early years, he has spent his entire life and activities thus far in this immediate section, devoting his efforts definitely to the industrial, social and economic development of the section which gave him birth. "A home town boy who made good—*at home*!"

J. K. Dixon, Arthur's father, removed to Georgia when Arthur was eight years old, and 1899 found the lad matriculated at the University of Georgia, in Athens, seriously girding himself for his chosen profession, law. Shortly after, however, his father returned to Gastonia, to become president of the Trenton Cotton Mills—then a carded yarn plant of 3,000 spindles. In a year Arthur came to Gastonia, and with a youthful energy that demanded an outlet, began work as general boy-of-all work around the plant.

Then it was that active legal ambitions left him. This was young Dixon's first advent into business and industrial life. Boyhood passed away, and the keen business acumen of manhood evidenced itself. He began to analyze his capabilities and possibilities in this new industry which at the time had begun its renaissance in the inviting environment of the Piedmont area; and in connection with the future opportunities of the state that gave him birth. So, actively at least, he withdrew his energies and plans from professional and public life, and applied himself to acquiring proficiency in the cotton mill business.

As anyone who has "worked through the mill" can understand, from this point until a time several years later, Arthur's career and activities became somewhat obscured and devoid of especial interest. He had his hands full. In the meantime, though, there was his period of training at Raleigh. When he first started in the mill, he asked T. C. Wilson, at that time superintendent, about the wisdom of taking a technical course in textile manufacturing; and accepted Mr. Wilson's advice to work in the mill a couple of years before going to Raleigh. Thus we complete the details of the background leading up to the debate.

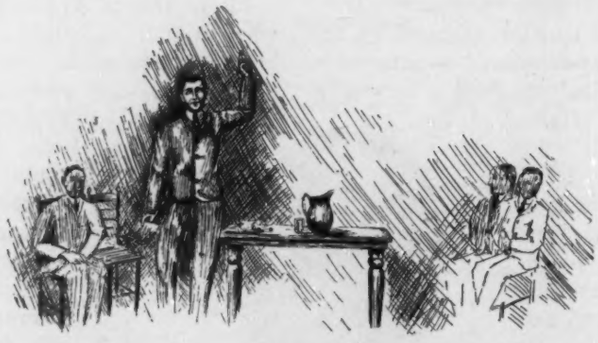
Dixon remained at State College for one year, finding the practical training previously received in mill work of tremendous assistance in grasping the theoret-

ical details, etc., comprising the course at the school.

Dixon returned to work in the Trenton mill, and in 1908 became superintendent. An index to at least one characteristic of his is that when the vacancy occurred, all of the directors save his own father who was president, voluntarily recommended him for the place to his father—a definite indication that the promotion was awarded upon merit rather than connection.

Up to this time, young Dixon's energies had been devoted almost entirely to the manufacturing of the yarn, and in a few years he had broadened sufficiently to warrant the additional duties of assistant treasurer, which involved the merchandising, as well as the manufacturing, of the mill's product. Incidentally, by this time the mill had been growing normally and healthfully, until it operated 11,000 spindles; and the product had been changed to combed yarns.

By 1919, Dixon had mastered the problems of the Trenton mill, and, having reached the highest point of promotion possible and finding further energy and talent and ambition unemployed, became restless in that manner which has characterized the individual development of many a great American and the development of many an American enterprise of prominence. The maxim, "If you want a bigger job, make your own job bigger," had impressed itself upon his mind, and so, in the early months of 1920, the Dixon Mills, Inc., another fine yarn mill for Gastonia, which he had promoted and built, was placed in operation under his direction. He now holds, actively, the position of treasurer of this plant (since enlarged from 6,000 to 12,000 spindles) and of the Trenton Cotton Mills, Inc.



These duties well in hand by 1925, Dixon found himself still with energy and ambition, by accretion of experience and application strengthened now with amplified ability and knowledge of textile manufacturing and merchandising. So, in September of that year, he became vice-president and assistant-treasurer of the American Yarn & Processing Company, at Mount Holly, N. C., where Charles Egbert Hutchinson, a former president of the American Association, is president and treasurer. This company operates six yarn mills and a finishing plant, and Dixon is active both at Gastonia and Mount Holly, dividing his time between these two-plied duties.

So much for the record of Dixon's business career. Early in life Dixon realized that no man is a good citizen who devotes his entire time to his own business—that to discharge properly his complete function, he must take an active interest in his industry and his community. Furthermore, it is patent that our earliest ambitions and training cannot be entirely submerged; our dreams and inclinations will eventually assert themselves. It was logical, therefore, that with the combination of such an attitude and an inherent aptitude and inclination for things political, we should find Dixon concerned along that line. Inherently, Dixon is a man who loves his fellowman and likes to help shape and mould public opinion with reference to public matters and industrial policies, particularly in regard to the industry with which he is connected. He's a born leader, operating upon the belief that leadership is the greatest asset a man has, and that force should be used only as a last resort.

Thus, naturally, we find Dixon prominent in the affairs of his industry and his state. Strangely, however, he has dodged public office, preferring rather to exercise his influence from the ranks, and give his counsel of a political and economic character the untrammeled and unbiased viewpoint thus afforded it. He has, however, served as Mayor of Gastonia, and as Senator from Gaston County in the state legislature. The requirements of those offices, however, would in no way circumscribe his influence and activity in connection with the political life of the state.

Dixon has served as president of the Gaston County Textile Manufacturers' Association, and of the Southern Textile Association and the Cotton Manufacturers' Association of North Carolina, holding the latter two offices concurrently — indicating a recognition by both the practical men in the Southern Textile Association and the financial executives in the state association, of his qualities of leadership. He is a director of the Cotton-Textile Institute, a director of the North Carolina Railroad Company, and for four years has been a member of the Governor's State Advisory Budget Commission for North Carolina. For eight years he has served as a member of the Board of Trustees of North Carolina State College, and manifests an active interest in the institution's welfare, especially with reference to the textile department.

Dixon has been married twice. He first married Miss Lottie Ray, daughter of R. R. Ray, of McAdenville, N. C., who died in 1920. Later he was married to Miss Blanche Heiserman, of Albia, Iowa. He is a member of the Main Street Methodist Episcopal Church, South, of Gastonia, and a member of the Kappa Alpha fraternity. He is a Mason and a Shriner, and is also a member of the Knights of Pythias, Junior Order of United American Mechanics, and Improved Order of Red Men.

As a man, Arthur Dixon is a most likeable person, and enjoys the confidence, respect and friendship of a host of people, not only in North Carolina, but throughout the South. He is a clear thinker, and a good talker, rather noted for his wit and humor; he is always able to drive home a very important fact by the use of a good story.

The foregoing biographical sketch, it is true, re-

(*Continued on Page* 1065.)

Profitable *Joint* Meeting *is* Held *in* Atlantic City

American and National Associations Convene Jointly and Discuss Subjects of Mutual Interest; Bassett Talks on Mergers

PROBLEMS of a mutual character occasioned the third joint meeting of the American Cotton Manufacturers Association and the National Association of Cotton Manufacturers, which was held at Atlantic City, N. J., at the Hotel Traymore, on May 24th, and the deliberations of the joint sessions, and of the separate meetings of the individual organizations, centered around subjects of pertinent interest to all cotton manufacturers—northern and southern alike—comprising the memberships of these two associations.

The occasion was the semi-annual meeting of the National association, which held one brief session on Friday morning, with no business being transacted. The American association, in annual meeting at a business session on Saturday morning, May 25th, elected Arthur M. Dixon, of Gastonia, N. C., as president; B. E. Geer, president, Judson Mills, Greenville, S. C., as first vice-president; and Cason J. Callaway, of LaGrange, Ga., as second vice-president. W. M McLaurine was re-elected secretary and treasurer. Donald Comer, of Birmingham, Ala.; W. H. Hightower, of Thomaston, Ga.; B. B. Gossett, of Charlotte, N. C.; J. C. Evins, of Clifton, S. C.; and Thomas H. Webb, of Concord, N. C., were elected to the board of governors to fill vacancies, and T. M. Marchant, of Greenville, S. C., was elected for a two-year term.

The American association meeting was held on Friday morning, May 24th. After the preliminaries, Secretary W. M. McLaurine presented his report which showed the association to be in splendid condition and reflected a year of extraordinary activity and useful accomplishment. Mr. McLaurine emphasized the value and necessity of the organization in the scheme of southern textile manufacturing.

H. R. Fitzgerald, president of the Riverside & Dan River Cotton Mills, Danville, Va., who so ably served the Association as president during the past year and who presided at the Atlantic City sessions, next presented his address as president. This paper received high commendation from all sides as a masterful presentation of conditions and as a beacon of inspiration to manufacturers. It is being printed separately in this issue of COTTON on page 1001.

John E. Edgerton, president of the Lebanon Woolen Mills, Lebanon, Tenn., and president of the National Association of Manufacturers, followed Mr. Fitzgerald on the Friday morning program, speaking upon The Problems of Progress.

Mr. Edgerton emphasized the problems which accompany every progressive development, and particularly dwelt upon the tremendous increase of legislation and taxation affecting business, urging the manufacturers to devote more time and attention to things political.

The final scheduled speaker of the morning session was Arthur W. Palmer, who is in charge of the Division of Cotton Marketing, U. S. Department of Agriculture, Washington, D. C. Mr. Palmer outlined in detail the activities of the division, emphasizing the

National Association Session

THE National Association of Cotton Manufacturers, meeting jointly in two sessions with the American Cotton Manufacturers Association in Atlantic City on May 24th, held only one brief separate session, on Friday morning. President Lincoln Baylies presided, and in his address, told of the plans for forum discussions of the practical operating men of the eastern mills, which will be conducted under the Association's

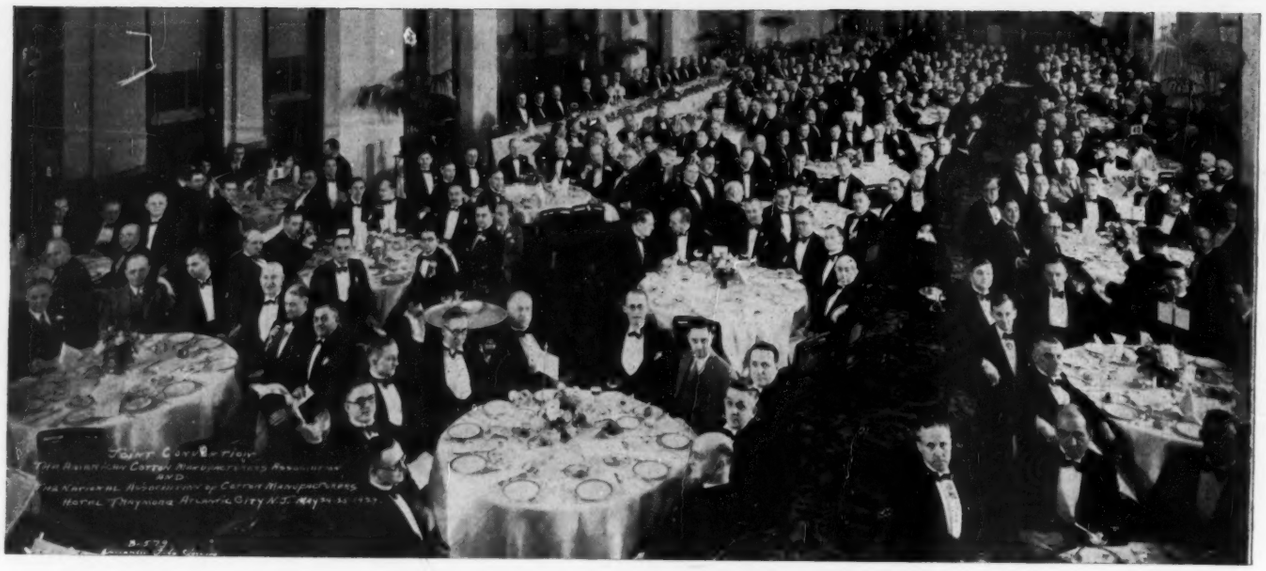
Lincoln Baylies, President of National Association

auspices. An announcement of these palns has already appeared in these columns.

There were two other speakers at this session. Katrine Hooper, former chairman of the Style Advisory Board of the Association, discussed "Cotton, Esperanto of Style," urging the manufacturers to consider more carefully the possibilities of styling cotton fabrics.

O. F. Cook, of the U. S. Bureau of Plant Industry, discussed the work of the bureau in rehabilitating Sea Island and other long staples.

The Association had a representative attendance of members, and these delegates joined with those of the American association in the joint session on Friday afternoon, and at the banquet in the evening, both events being reported elsewhere in this issue.



A View of the Joint Banquet at Atlantic City.

work it has been doing in conjunction with the Cotton-Textile Institute and Department of Commerce in extending uses for cotton, and commending the Institute on the work it is doing along this line.

Gardiner H. Miller, president of the New York Cotton Exchange, spoke briefly, at the conclusion of the session, explaining the new department of the exchange which will deal in textile securities.

The American association held its business session on Saturday morning, and one feature was the election of officers, reported previously in this story. The opening feature was an address by Magnus W. Alexander, president of the National Industrial Conference Board, who outlined the work of this organization with particular reference to the textile industry.

Resolution Approves Institute.

E. C. Dwelle, vice-president, Chadwick-Hoskins Company, Charlotte, N. C., presented the report of the associations' cotton committee of which he is chairman, and outlined the work of that committee during the past year. W. D. Anderson, of Macon, Ga., presented a recommendation which was adopted, that, with the cooperation of cotton shippers, a new joint board of arbitration be appointed. Mr. Anderson, reporting for the industrial relations committee, stated that an insufficient response had been made to a questionnaire on this subject for the continuation of its work. Stuart W. Cramer reported as a member of the National Council, and Cason J. Callaway submitted the report of the resolutions committee. One important resolution adopted by practically a unanimous rising vote, was the one pertaining to the Cotton-Textile Institute. This resolution commended the work of the institute, reading as follows:

"WHEREAS, The Cotton-Textile Institute was formed to create a central organization to afford nationwide representation of the cotton textile industry, to initiate and stimulate ideas and practices of sounder merchandising through providing facilities for the collection and distribution of informaton and through facilitating contacts not only within different groups in the industry but with every related industry involved in either the production or distribution of cotton or in the distribution of cotton goods, through promotion of better understanding of existing practices and the opportunities for improving them, and through comprehensive study of new and extended uses looking to the development of domestic and export markets and through a national sales promotional campaign which has been largely instrumental in bringing about a nationwide revival of the acceptance of cotton as styled fabrics,

"AND WHEREAS, the Institute's work along all these lines has not only already made progress of the most beneficial and stimulating character, despite the fact that it is only two years since the Institute was organized to the point where it could satisfactorily function, and gives assurance of steadily promoting to an increasing degree the purposes for which it was formed and whereas the magnitude of the undertaking is such as to make it essential for the Institute to continue to function with an ever increasing breadth of support,

"THEREFORE, BE IT RESOLVED:

"1. This association hereby expresses to Mr. Hines and his associates our sincere appreciation for the valuable service being rendered the industry by the Institute;

"2. Our officers be instructed to cooperate in every way with the Institute and that our members be urged to join promptly and wholeheartedly in the various group meetings and activities of the Institute; and

"3. That the members of the association which have not already signed the institute's participation agreement beginning with October 20, 1929, be urged to give their careful consideration to doing so, bearing in mind the desirability of their sharing not only financially but through their advice and cooperation in this great effort to promote the progress and welfare of the industry."

Other resolutions approved the movement looking toward the adoption of net weight as a basis in pur-

(*Continued on Page* 1062.)

PUTTING the TEXTILE HOUSE in ORDER

By Michael Welsh

Article I.

THIS article begins a series in which an effort will be made to direct attention to certain angles of mill operation which commonly do not receive careful attention by all mill men; as well as to discuss methods which are being appied by some of the leading mills of the South.

A man associated with one of the most important cotton manufacturing firms in the South is writing these articles, to present his views for the consideration of others. He has adopted a nom de plume to permit a frank expression of his personal views which, at times may not reflect the attitude of his own organization—though his discussions in no sense consist of "theorizing"; they are rather based upon extremely practical, first-hand experience. —The Editor.

AMONG the majority of mill executives there has been a tendency to look askance at any ideas concerning cotton manufacturing which appeared to have originated from so-called impractical sources. This attitude has been to a great extent engendered by radical criticisms and recommendations coming from sources without the circle of a sympathetic understanding, particularly in the South. Due to the multitude of unjust assaults by antagonists who have frequently attempted to undermine the southern textile industry, it has been very hard for constructive ideas, based on theories which have proven helpful to other industries, to be considered by the southern cotton mills.

Few Changes in the Principles of Manufacturing.

There have been but few changes in the principles of cotton manufacturing in many years, and in practically every case these have evolved from machinery improvements. Even these changes have not benefited the mills to the extent of their potentialities. The time has come, however, when mills must look beyond their past experiences and be willing to consider constructive plans for improvement.

Introspection Recommended.

In attempting to determine "what's wrong with the textile industry today," the manufacturers are discussing such topics as over production, night work, a closer cooperation between mills, the maintaining of fair prices, sales alliances, export trade, etc. There have been many hundred expressions from executives on these topics and, no doubt, definite benefits will result from the intent considerations of these vital problems; however, there are other matters of extreme importance within the industry itself, which should be considered at this time.

This article and a series to follow, will deal with certain mill conditions, some of which have not been seriously considered by the industry as a whole and others which have recently received the serious attention of a few of the most progressive mills.

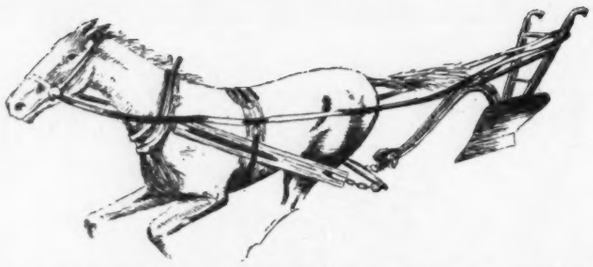
Never before in the history of the cotton mills of the South has such an advantageous time for inventory taking existed. The word inventory in this case refers not only to material properties, but also to labor, processes, policies, and future possibilities. By an intelligent analysis of existing conditions and a determined effort to become more efficient, cotton mills can capitalize on this period of depression and convert now apparent losses into future profits.

Past Theories Offer Present Possibilities.

Ten years ago a young graduate from a textile engineering college was so bold as to remark to a prominent and capable mill executive that, through a readjustment of machinery processes and a re-allocation of labor and duties, great sums of money could be saved annually. He was neither encouraged to, nor capable of extensively demonstrating just how this could be done. Now that the margin between manufacturing costs and sale prices are so narrow that even the glasses of the optimists fail to separate them, this idea appears to be worthy of consideration, and a few manufacturers already see obliteration at the end of that old rut they have been traveling in. There is little doubt but that a mill would have encountered great trouble in trying to revolutionize the plant ten years ago, but conditions are now such that by exercising extreme caution with each step, many needed changes can be brought about to the mutual advantage of the mill and the employees.

One of the first steps that can be taken is the cata-

loging and analyzing of the jobs in each department, the classifying of the employees according to the skill and experience actually necessary for the best performance of each task, and the determining of the minimum number of employees needed to insure one hundred per cent operation of each department. From this inventory some mills could see their way clear to make adjustments in their payrolls—in many cases reducing the number of employees without curtailing the effectiveness of the departments or introducing any radical changes, such as the re-assignment of jobs. Of course, every mill supposedly watches the number of employees on each department payroll and the respective amounts, but this knowledge is generally used for comparative purposes and not to determine what the actual requirements are.



YOU WOULDN'T HITCH A RACE HORSE TO A PLOW.

The Extended Labor System.

After these adjustments are made, consideration of what is now known as the "extended labor system" is advisable. Considerable resistance to this system has been noted in several plants recently. Opposition to new ideas, particularly in an industry as unaccustomed to revolutionary changes as is the textile industry, is to be expected; however, it is believed that less disorder and opposition would have been registered had the managements exercised a little more tact and better familiarized themselves with all pertinent factors before proceeding. They cannot afford to turn back, but should attempt to develop more gradually the system in their plants. The extended labor system does not signify more work for the same wage or the same work for less wage, for it is no more than the re-classifying of labor according to skill and the readjustment of pay on the same basis. The ideal way would be to pay each employee according to his actual worth, but that of course will never be, but it is possible to divide and assign all labor in a cotton mill according to the skill required for each performance, as has been done in practically every other major industry. Under the present system, there is no purely skilled or semi-skilled labor. In fact, in practically all mills the majority of the operatives perform tasks requiring all three classes of work.

Three definite benefits can come from the perfection of an extended labor system.

Lower Manufacturing Costs.

First: A mill can lower the manufacturing costs by giving all work not requiring skilled employees to unskilled labor at wages commensurate with the experience and skill necessary for the jobs, thus relieving the more skilled employees so that their services can be extended. Thus far this system has been introduced in several southern mills. The most conspicuous examples of its benefits have come from the weave rooms where it is known as "the multiple loom system." In most cases that have come to the attention of the writer, the system has functioned satisfactorily. The weavers are relieved of all work other than weaving and are given more looms to run. The other duties previous imposed upon them are cared for by less experienced and skilled employees at a lower wage. The mill obtains at least the same production per loom at a lower labor cost per pound after paying the weavers larger wages. Practical demonstrations have also been made in a few spinning rooms with less conspicuous results, but with appreciable savings. The principles of the system should prove practical throughout the mill, and it is believed that some startling revelations will be forth coming when the system is tested thoroughly.

Beneficial to Employees.

Second: The system will eventually prove satisfactory and advantageous to the employees—particularly to those who possess skill and ability, for they would be afforded a greater opportunity to increase their pay and advance according to their individual efforts and ability. Their work would more conspicuously represent their true value. Imperfections and bad work could more easily be traced to the origin, which would have a tendency to increase individual responsibility and decrease imperfect work.

A More Dignified Industry.

Third: The entire industry would become more dignified; ranking in every respect with the other major organizations throughout the country—thus forcibly quieting the voices of those who in the name of a so-called humanity would wreck mammoth industries, economic structures, social necessities to satisfy selfish desires and pedagogical dreams.

"The Handwriting on the Wall."

It is to be hoped that the cotton mills of the South will "see the handwriting on the wall" and be ready to emerge from the present slump prepared to carry on efficiently with their plants adjusted to meet both the demands of discriminating buyers and the social and economic pace of the times.

Acid Dyestuffs on Wool and Silk Weaves.

The Society of Chemical Industry in Basle is now offering a sample card which gives an illustration of 32 acid and cloth fast dyestuffs which color both threads evenly, as well as 12 dyestuffs, which reserve silk. For the uniform coloring three different methods are recommended, whereby use is made of the established fact that, in weak acid baths with higher temperature, wool draws stronger than silk. For reserving the silk, two further methods are recommended. To produce pure white effects, an after treatment with ammonium oxlate is used once, and an after treatment with hydrosulphite-acetic acid is prescribed the second time.

Observations of HANK G. SPINDLE, SUPERINTENDENT

By H. Gilmer Winget

YOU'LL like this, we are sure. In this article Mr. Winget tells the story of a friend of his, who has a record that is interesting because it is so typical. In spite of what he says, we suspect there is a little biography in it—if not autobiography. Before he finishes, the writer has Hank giving his views on several subjects of timely interest about some mill problems. If you have anything you would like to have Hank discuss, drop him a line in care of us, and he will be glad to consider it for a future article—Editor COTTON.

THIS is a story of the experiences and problems of a friend of mine and yours—Hank G. Spindle, Superintendent. It is in no sense a biography, as Hank insists that up to this good day he has accomplished nothing to make him an outstanding figure in the textile world, and that, therefore, he can claim no right to having his biography placed with that of Richard Arkwright, or Crompton, or the Drapers, in an encyclopedia.

For the good of the story, however, it will be necessary to say a few words about Hank as a personality. His observations would be worth little if it were not known that Hank, like many successful business men, was born of poor parentage; that he saw his first light in a small two-room cabin in the North Carolina foothills; and that his habits while growing up were the usual habits of a boy in the 1880s and 1890s: eating everything he could get his hands on, evading all the "turns" around the house, and visiting the swimming hole and fishing in the brook.

Hank's Background.

Hank was born in a small burg, which boasted a depot, not a station. Everybody in the town knew when everybody else was in town, and a visit to Charlotte, a few miles away, was an event. Everybody had his own cow and pigs, dogs and cats, and most of them had a well, but not everybody. Some folks had to carry water in a bucket from a neighbor's house.

One morning the whole town was electrified, shocked and otherwise wrought up by the announcement that a cotton mill was to be built down near the depot. There was a flurry of excitement, and there was much wisdom dispensed by the older ones in the way of advice and prophesy. Some advised that the fellow with money should get in on the ground floor. Others said it was a big risk to run, putting your money into a big thing like that; that the big hog would eat up the little one. In this particular instance the latter prophesy was correct, for, after the mill was built and operated for a few years, there was a crash, and some of the wise heads said, just as they do today, "I told you so."

But this is neither here nor there so far as Hank was concerned, as there was no money in his family to be lost. He had become a good-sized boy, and he wanted to get in on the ground floor, so he got a job sprinkling the clay at the brick mill, where the brick were made. When the walls were up, Hank's job was up, too, but he desired to become a mill man. . . .

A Few Years Later.

Skipping over a number of years we find him now a superintendent of a group of mills, and a stockholder in several. He did not inherit a single textile share nor even the inclination to become a mill man, but the idea made an impression on him when he was sprinkling clay, and he started working in the mill with the idea of becoming a superintendent.

We won't say how good Hank is. He is willing to leave that to the president or treasurer. But he does not expect a favorable comment within the next few days, as the uptown office has just received a complaint about the quality of some yarn that was produced at one of the mills, and Hank says that he is not pressing them for a compliment this week.

Be that as it may, Hank has had a varied experience in 26 years of mill life, and 20 years of married life, and he says that between the two, he is about worn to a frazzle. But he wants nothing said about it as it might get back to his wife, and the truce now existing in the household might be called off, and he prefers to go a little beyond the Biblical injunction "to live peaceably with all men," and live peaceably with all men and women, if possible.

But getting now to the observations of Hank. He asked me the other day, "Have you been reading this magazine called COTTON?" I said, "Yes," and he said, "Well, did you read where some fellow was h[illegible] trouble with the roving lapping up on the steel [illegible] on his spinning frames?" I replied that I had. Then Hank said,

Hank Gives His Opinion.

"I had trouble of that kind, too. In a mill of 20,000 spindles I had a world of trouble with lapping on the middle steel roller. I tried everything I could think of without any good results, until I cut down the back draft. I had started the mill up on 1⅜-inch cotton to spin 80s to 100s. We had a leather roll front and back, and a light running metallic roll in the middle. At times the roving would lap around the top rolls also. That was after we cut the length of staple to 1¼ and 1 5/16-inch. We had little trouble with them while running the longer staple.

"When we changed to a slightly shorter staple we had one awful time. It required the services of two men on each shift to remove the laps. We used pumice stone to slick up the rolls; we finally put the back bottom roll in the middle, but that did no good.

"I read everything I could find about rolls and roll settings. I set them every way they could be set, and the result was always about the same. We still had the laps.

"One day I was talking with a friend and told him I believed the trouble was that the roving was being strained between the middle and back rolls, and this was partly due to the heavy middle roll, which did not allow the stretch to be the same from the back to the front roll, and I believed I would try cutting down the speed of the middle steel roll. There was a difference of six teeth in the middle roll gear and the back roll gear, and I cut this down to a difference of four teeth. The work showed some improvement. I then cut it down to two teeth difference and this improved it wonderfully. Then I changed them so that there was only one tooth difference and I found that we had completely gotten rid of our trouble. We were able to cut off two men from each shift and make a better product, because it is reasonable to suppose that there were many places which were weak that did not break in the roving.

"As I said, we were running in the middle a so-called light running metallic roll. We are still using it with fine results, where the roving is under 8.00-hank, but for finer rovings and finer numbers the best thing that I have tried is the leather-covered wood roll.

The Wooden Middle Roll.

"Now that may call for an explanation, because once in a while you will find a fellow who hasn't had very good results from this type of roll. I may be wrong. I am not setting up my judgment as beyond question, but these have been experiences of mine, and are told as one man's opinions, based upon results obtained. They may not work in another fellow's mill, but they might be worth trying.

"What I started to say was that I believe that the fellow who is having trouble with light running middle top rolls is having this trouble because he either has a roll too light or one too heavy for his roving. It is more apt to be too heavy.

"We made a quantity of cockled yarn. We thought that it was a good thing to make a little; it showed that our rolls were not set too wide. I was using a metallic roll in the middle—a good roll for a heavier hank roving. We changed to a leather-covered wood roll, weighing about half as much as the metallic roll, and cut out the cockled yarn and increased the breaking strength slightly. If we had changed to a roll of the same weight, my belief is that it would not have mattered what the material was, there would have been no difference in the amount of cockled yarn. To sum it up, if I was now having trouble with lapping up, I would try cutting the speed of the middle steel roll, and if I was bothered with cockled yarn I would put a lighter roll in the middle."

Turning Over Twister Rings.

"Well, Hank," I asked, "what is your opinion as to the advisability of turning worn rings over, particularly twister rings? Is it worthwhile?"

"Well," he replied, "there is a wide difference of opinion concerning the turning of rings, but since you have asked me for my idea I will give it for what it is worth.

"Usually, when a ring has become worn, it is hard to get a traveler to stay on. The traveler flies off and waste is produced. The usual procedure is to take the matter up with the traveler manufacturers, and they take a ring and try to make it fit by shortening the traveler, but this is only a make-shift remedy and does not prove satisfactory for the simple reason that no two rings are worn alike and therefore a traveler that is fit to one may not fit another.

"My experience has taught me that when rings become rather badly worn, the wise thing is to purchase new rings and save yarn that would go into hard waste and travelers that would fly off. The saving on these two items will soon pay for the new rings, and the running of the twister room will be more pleasant and the product turned out of better quality, in increased quantity. The former is not to be sneezed at in this day of keen competition.

"Well, I hear the 5:30 bell. It will soon be changing time. Run along now and I will study over things a little and try to give you some more opinions later. Send these down to that fellow Philip in Atlanta and he can publish them in COTTON if he doesn't think his readers will string him up for inflicting this on them. Anyway, some fellow might get something out of these observations that might help him, and, to say the least, they won't hurt anybody."

[Mr. Winget will be glad to continue these short articles if we receive indication that they are desired. If you would like to have him write some more along this line, drop us a line to that effect.—The Editor.]

"The Story of Rayon."

The second edition of the "Story of Rayon," published by the Viscose Co., is now ready for distribution. The company states that this new book gives a general history of the development of rayon, the Viscose process by which Crown Brand rayon yarn is manufactured, along with other processes, and statistical data relative to the United States and world consumption of rayon. The book contains illustrative pictures showing the various steps in the manufacture of rayon by the Viscose process. The Viscose Co. will be glad to forward copies of this book to those interested upon request.

CARD ROOM Topics Discussed *At Texas Convention*

Reports on Greenville Show; Single-Process Picking; Running Loose Cotton; Waste Percentages; Cleaning Schedules, Etc., Covered

A DESIRE on the part of everyone present to better operating conditions and methods of the mills of the state was manifested at the 28th semi-annual meeting of the Texas Textile Association, which was held at the Hilton Hotel, Waco, Texas, on Friday and Saturday, June 7th and 8th. A majority of the mills in the state were represented, together with students and faculty members of the textile department of Texas A. & M. College. Hugh S. Clarke, general superintendent, C. R. Miller Mfg. Co., president of the Association, presided and conducted the discussions. Two discussion sessions were held—one on Friday evening and another on Saturday morning.

Herbert A. Burow, superintendent, Consolidated Textile Corporation, Bonham, Texas, was elected president succeeding Mr. Clarke; L. R. Manning, of Waxahachie, was made first vice-president, and J. O. Wilson, of Gonzales, second vice-president. Dan H. Poole, of Sherman, was re-elected secretary-treasurer.

Herbert A. Burow, the New President of Texas Textile Association.

Following the preliminaries, and the address of President Clarke, the meeting was turned into the regular open forum discussion of a set of prepared questions. The first feature was a report from Dan H. Poole, superintendent, Sherman Manufacturing Co., Sherman, Texas, upon his trip to the Southern Textile Exposition in Greenville, S. C., last Fall, as the representative of the Association.

Poole Reports on Greenville Show.

"It was my privilege and pleasure to attend the textile show held at Greenville, S. C., last October," said Mr. Poole. "I have attended a number of shows in the past, but the one last Fall surpassed all previous ones, not only in the attendance, number of exhibits, etc., but in the keenest amount of interest, from the first hour of the show until its conclusion. In order that others who attended the show may have ample time and opportunity to tell you just what they saw, I shall make my report very brief:

"In my opinion, and that of others with whom I talked, the high speed warping and one-process picking were the outstanding exhibits. And such was the variety of displays that one had ample opportunity to indicate his preference.

"First, we might mention the high speed automatic spooling and warping. This exhibit attracted unusual attention. There were other exhibits demonstrating the high speed principle, such as high speed winders, putting the yarn on cones, then the ordinary type of warper but with the magazine creel for the cones, operating at high speeds; also ball warpers, using the same principle. A very interesting exhibit was a high speed warper, with magazine creel, using the ordinary typ eof spool placed stationary in the creel, the yarn being unwound from over the end. All of these machines were operating at speeds from 350 to 500 yards per minute.

"Several different exhibits of one-process picking, automatic controls, etc., were shown, as well as: cards with continuous stripper; improved drawing; several types of constant chain drives for roving frames; ball bearing creels; long draft spinning; large package spinning; roller bearing spindles, etc.

"When it is understood that all the large manufacturers of textile machinery were exhibiting complete lay-outs, with scores of allied products, such as power transmission, humidifying equipment, lubricating methods, temperature controls, etc., in fact, everything of the very latest design connected with any phase of the mill, that engineering ingenuity could devise, was being shown at the exposition, then only could you realize that it offered an opportunity to the visitor to secure information and knowledge of a nature that will be digested and applied to his own local conditions even in the months and years to come."

Further comments were made by Herbert A. Burow, superintendent of the Consolidated Textile Corporation, Bonham; Claude Mast, superintendent, Itasca Mfg. Co., Itasca; and J. B. Bagley, of Texas A. & M. College, all of whom attended the Greenville show. Mr. Poole stated that there were thirteen men from Texas mills at the exposition and expressed the hope that there would be twice that number at the next show.

The next question taken up was: "One-process picking—its advantages as to uniformity of blending, strength, evenness, etc., compared with two or three

processes."

Only one mill in the state—the Sherman Mfg. Co.—was equipped with single-process picking at the time of the meeting. Mr. Clarke remarked that this subject should be of interest to all since the trend is now toward consolidation and elimination of useless processes wherever possible. "It is just a matter of time until we will all be coming to it," said Mr. Clarke. Mr. Poole, reporting on the Sherman installation, said:

One-Process Picking at Sherman

"Last year we installed one-process picking, and up to the present time have had surprising results, both as to uniformity of blending and evenness. This has been accomplished without any reduction in our breaking strength, in fact, the average is somewhat higher than before this installation was made.

"Probably the most outstanding feature we have yet experienced, is the uniformity of the lap, not only yard after yard, but inch by inch. We have made all-

Dan H. Poole, Reelected Secretary.

day and all-week checks on the weight of the lap, and the record (if it has been kept) will verify the amazing results obtained even before we had the machines adjusted to where they are now.

"There has been much written about the necessity of doubling in the picker room, and to one who has not experienced the results obtained without doubling, it would seem impossible. Yet here are a few of the conclusions we have from actual experimental tests: First, the mixing and blending of the cotton. Second, less ends down at drawing, slubbers, frames, spinning, and, so far as I know, less end breakage in weaving. Third, the action of the beaters on a fluffy sheet of cotton making cleaning easy without injury to the fiber.

"Of course, local conditions will, as usual, play an important part in the ultimate results. We are fortunate at Sherman in having unusual equipment in the opening room, consisting of two separate lines of cleaning machinery with bale breaker, tandem feeder, vertical openers, lattice cleaner with cage section—coming together in the carrier pipe, which is in itself a blending and mixing of the different bales of cotton. It is reasonable to expect that a great amount of attention is required to all the working parts of this lay-out to preserve an even, continuous sheet of cotton flowing into the hoppers. As the correct level without too great an overflow, requiring hand feeding, is conducive to even laps and the ultimate goal—good, even running work." In answer to a question, Mr. Poole said he formerly had three processes of picking—breakers, intermediates and finishers—these being replaced by the single process.

"How about the labor saving?" asked Mr. Clarke.

"I save about $30 to $40 a week," replied Mr. Poole, adding that he cut out three men in the picker room.

The next subject furnished an interesting discussion. The question was, "State fully your experience with running loose cotton, its effect on the card room and end breakage and breaking strength." Herbert A. Burow, of Bonham, Texas, made the first report, as follows:

Running "Loose" Cotton

"I think it is hard to say whether or not loose cotton really saves a man anything. Somebody has to be put in the opener room to pick every bit of it to get out the strings, buckles, bottles and other junk, and his wages run up the cost per pound. Furthermore, this junk weighs up with the cotton and is paid for as cotton, so that constitutes a further loss. Yarn spun from loose sample mixtures does not run as well on the spinning due to the strings that get by and are carded up with the cotton. The breaking strength goes down where loose cotton is run, and the waste loose cotton goes up. Also, we have more fires in the picker room. That is our experience with loose cotton."

Ingram Lee, superintendent of the Dallas Textile Mills Department of the C. R. Miller Mfg. Co., Love Field, Dallas, reported that he had run a test on the effect of different percentages of loose cotton on breaking strength. "We have always run a good high percentage on our loose," said Mr. Lee, "and we have not had any permanently bad effects. Of course we have our troubles with it. We have to have it looked over, sometimes we have strings, and we have junk; but on the whole, it does not trouble us so much unless we get high enough percentages to affect the breaking strength.

"In order to determine the effect of loose cotton on the breaking strength of yarn, a test was made with, first, a 50 per cent mix of loose and then a 25 per cent mix. Having found that there was considerable difference in the breaking strength of yarns made with these two mixings, a 33 per cent mix of loose was run, and as may be seen from the figures obtained, this breaking strength falls between the results of the 50 per cent mix and the 25 per cent mix. The breaking test was made on a hand power strength tester, and in each case about 24 bobbins were tested.

"A mixture containing 25 per cent loose gives an average yarn number of 14.99s, an average breaking strength of 125.9 pounds, and an average breaking factor of 1.886. This break factor is arrived at by dividing the grains weight into the pounds break. The test with 33 per cent loose made an average yarn number of 14.39s, average break of 122.9 pounds and a

breaking factor of 1.768. The 50 per cent loose gives an average yarn number of 14.55s, an average break of 115.7 pounds and a break factor of 1.684.

"Besides giving the best breaking strength, the 25 per cent mix shows a more uniform yarn. The variation is from 116 to 138 pounds, or 22 pounds difference; whereas in the 33 per cent mix this variation is from 104 to 136, a difference of 32 pounds, and in the 50 per cent mix from 105 to 130, 25 pounds difference. The highest break in the 25 per cent mix is 138 pounds; in the 33 per cent mix, 136 pounds; and in the 50 per cent mix, only 130 pounds. A 41 tooth twist gear was used in all three cases, giving a twist of 17.2 turns per inch or an average twist factor of 4.50. An average humidity of 57 per cent was maintained throughout the test, the humidity not varying over five per cent for the three different tests."

"Loose" Cotton Reduces Breaking Strength.

Hugh S. Clarke stated that, "we use ten per cent loose and have found no bad effects. We have put in a better installation of opening equipment and believe that accounts for it. This includes a bale breaker, an upstroke cleaner, a vertical opener and a Centrif-Air machine. With this arrangement we get a better opening and also more foreign matter is thrown out before the cotton gets to the pickers. We do not have any trouble with fires when we run loose; but I do find that our breaking strength goes down about two pounds on 9s when we run loose. I think the whole secret is in getting the proper opening; and as for the money saved, I find it amounts to about one cent a pound over Middling. What is the experience of the rest of you on end breakage?"

J. B. Bagley, of the A. & M. College, reported that he ran his textile equipment in the school almost entirely on sample loose. A man goes through and picks it. "On good days it runs fine," he said, "but on bad days it runs pretty badly. A mill might be able to run on all sample loose, but it would be mighty hard."

Different percentages of waste—card waste (not including lap waste); drawing, and roving waste—which is put into the regular mix were requested in the next question. The first report came from O. B. Haney, assistant superintendent of the Waco Twine Mills, Waco. His card sliver was 4.1 per cent of his total opening; drawing sliver, 1.1 per cent; and roving waste, .62 per cent, or a total of 5.82 per cent. Herbert A. Burow reported a test covering a period of four months which showed his card sliver waste to run .22 per cent; drawing, .030 per cent; and roving, 1.26 per cent—a total of 1.78 per cent. This was commented upon by several men as being extraordinarily low.

Mr. Lee reported as follows: "A two-week test was made to show the percentage of waste run in the regular mix. There was quite a bit of difference in the various percentages for the two weeks, but an average was taken, and percentages were arrived at by dividing the amount of each kind of waste run by the cotton opened for the same period of time. The results were as follows: Card sliver, .534 per cent; drawing sliver, .278 per cent; roving waste, including spinning and scavenger rolls, 1.931 per cent. This gives a total of 2.743 per cent on 120,423 pounds opened."

James Clarke, superintendent, Pioneer Cotton Mills, Guthrie, Okla., reported that his card sliver ran 3.0 per cent; drawing sliver, 2.7 per cent; and roving waste, 3.8 per cent—a total of 9.5 per cent waste. He said, "I can easily account for this high figure by the grade of mix that I run. We use a very high percentage of strips and other waste which makes our loose put back into the mix very high."

Hugh Clarke reported the following for the Miller Cotton Mills at Waco: Card sliver, .7 per cent; drawing sliver, .639 per cent; and roving waste, 1.85 per cent—a total of 3.189 per cent.

Mr. Poole brought out here the point that he did not believe it pays to keep a daily report of the waste made by each employee. He said this causes them to carry off the waste and hide it, and otherwise dispose of it, to keep their figures from running too high. "I appeal to the individual to hold down his waste," said Mr. Poole, "and I find it works very well."

Hugh S. Clarke, Retiring President.

The number of beats per inch in the picker room was the subject of the next question. James Clarke of Guthrie reported 18.08 on a two-blade beater and 5.03 on Buckley beaters in the breaker. He gives 37 beats with a Kirschner beater on the finisher, giving a total of 60.83 beats per inch. Mr. Clarke runs 50 per cent strips.

Beats Per Inch on Pickers.

Herbert Burow reported 102 beats per inch on three processes of picking. Mr. Haney of Waco reported 22 beats on the breaker, 60 on the finisher, a total of 82 beats per inch. Mr. Lee reported 19 beats per inch on the breaker, using a two-blade beater, and 59 beats per inch on the finisher with a Kirschner carding beater, or a total of 78 beats per inch, on Middling cotton, 15/16-inch staple. Mr. Poole said, "on my single process picking, I average 80 to 90 beats per inch." Hugh Clarke said that at the Waco mill he has a Buckley beater on his breaker giving 13 beats per inch, and a Kirschner on the finisher giving 55 beats per inch, a total of 68. Claude Mast of Itasca

(*Continued on page* 1067.)

Lights *and* Floors *in the* Dyehouse

Both are Important Influences Upon the Quality

By Louis J. Matos

TWO of the most important items to be given consideration in the equipment of a dyehouse, are illumination and flooring, not omitting water and ventilation.

Every dyehouse should be equipped with large windows permitting light to invade every part, so as to enable the workmen to see everything going on properly. In some of the older mills, the dyehouses are to be found with a scarcity of windows, and the light which passes in very much below the amount necessary to permit the kettle hands to do proper work. Indeed, to view some windows, one is convinced that they have not been cleaned properly either inside or outside for a long time, thus keeping out the flood of light that insures good work in the aisles and between the kettles.

To overcome this condition, mills are now waking up to the necessity of installing proper electric lights provided with suitable shades, and suspended at a suitable height from the floor. With such lights placed so that the illumination will be satisfactorily distributed, the possibility of off shades, and other defects in either yarns or piece-goods is materially reduced. Of course the superintendent of the dyehouse should have his office likewise equipped with good lights, not only suspended from the ceiling, but with one or two mounted on stands at the back of his matching table. Such an arrangement will obviate the necessity, frequently observed, of being required to match up or compare his shades in outside daylight.

In order to have suitable illumination, it is generally best to make use of the services of an experienced light expert, and to be guided by his recommendations. To hang "bright lights" indiscriminately around the dyehouse is not good policy; the best selection to install is the so-called daylight incandescent lamp which sheds light that has but little or no action on the eyesight, besides showing the colors as they really are.

Another item to consider is laying a substantial floor. At one time most dyehouses were floored with wooden planks, but these, in course of time, became rotted through the combined action of hot liquors and acids used in the dyeing operations.

As a rule, wood floors do not last long. Besides the causes above named, there is a continued wearing away due to the pushing of loaded trucks to and fro. Worn out floors retard progress in dyehouses, being a prolific source of inconvenience to the workmen who are in constant danger of tripping or slipping, incidents that are liable to cause painful accidents.

Many good floors are now being laid with concrete, which retains its finished surface for a long time, and adds greatly to the comfort of the workmen. Floors of other materials are also laid, such as asphalt, which, besides retaining its surface, retards the action of such of the spent dye liquors as are likely to drip from goods being pushed about on trucks.

In connection with floors, careful attention should be given to the plumbing, especially regarding the properly laying of drainage pipes, so that the kettles, at the proper time when batches of material have been dyed, may be safely run off without flooding the floor.

It is unnecessary to allude to the desirability of having the dyehouse supplied with an ample quantity of good, soft water. It is not the purpose of this article to go into the subject of water, but every dyer will agree with the writer that clean, soft water, is necessary to turn out good work, and which will prove to be a good investment for the mill.

Matching Color Shades By the Day-Light Lamp.

Clean water implies such as is not contaminated with suspended matter, the presence of which impairs the cleanliness of whatever textile material is handled. Soft water means water that is free from lime, magnesia or iron, substances that are responsible for more dyehouse troubles than any other causes.

Another item for consideration is the removal of dyehouse fog.

When dyehouses were wholly equipped with open kettles, the rise of fog was constant from the time steam was turned on in the morning until operations ceased at the close of the working day. With the increased use of closed kettles, those surmounted with a housing, the amount of fog has greatly decreased, but the fact remains that much fog is observed in those plants where the ventilation is insufficient to clear the inside atmosphere. Of course, in the warm weather, fog is of less consequence than it is in the colder months, and it is then that the need for ventilation is most apparent.

Mergers *in the* Textile Industry

By W. R. Basset
OF SPENCER TRASK & CO.

ONE of the greatest of the wastes which take their toll from the ultimate consumer is the expensive competition forced upon business by our anti-trust laws. The consumer has much to gain and nothing to lose even from complete monopolies. That, I realize, is quite the opposite of what most people believe. They still think of a monopoly as necessarily evil, basing their conclusions upon the methods of those monopolies formed during the 1890s, whose avowed object was to reap huge profits, chiefly by raising prices sky-high. But the sad histories of those same mergers prove that such methods defeat themselves.

Whenever price levels rise in an industry, competitors are attracted by what seem to be rich pickings. The price raising monopoly is then faced with the alternatives of taking part in another orgy of cut-throat competition or of buying out the newcomers as rapidly as they appear upon the scene. In these days, when vast amounts of capital are seeking investment in anything that promises a decent profit, any monopoly that tried to force prices up unduly would surely stimulate a veritable flood of new competition.

That is why I say that the consumer has nothing to lose from mergers, for the very methods that might hurt the consumer would carry their own cure.

American business men have learned all this. They have also learned that the surest way to make large total profits is to keep prices as low as possible so that they will be able to sell their products to the largest possible number of consumers. This they accomplish by taking only a narrow margin of profit and by using every possible method to keep costs down. Any men to whom bankers would entrust the management of a merger of monopolistic size would be sure to manage the business along these lines, with direct benefit both to the consumers and to the stockholders. Furthermore, with competition eliminated, a large part of the selling cost would disappear. The result would be lower prices to the consumer and probably higher wages to the employes of the monopoly.

I firmly believe that in time our law makers will come to understand these things better and allow monopolies to be formed. Unfortunately, that time has not yet arrived. Yet, even now you can form sizable consolidations of one sort or another which will help greatly to eliminate the many ills which beset the cotton industry.

MERGERS and their possibilities in the textile industry formed the topic of much of the out-of-session discussion at the joint conventions in Atlantic City, and those attending the banquet were tremendously interested in the address on this subject by W. R. Basset. Because of its pertinence and its place in the industry's thought at this time, we "cover" the subject by presenting the accompanying abstract of Mr. Basset's remarks along these lines.—The Editor.

Which type of consolidation any individual concern will find it best to be a part of depends upon its product, its position in the stream of production from raw cotton to finished product, its size and strength and many other considerations.

Because of the complexity of the cotton industry and the large number of units in it, I believe that it would be unwise to attempt to set up any consolidation in its ultimate form all at once. It would be much better to aim at a gradual growth—letting the final consolidation evolve through several steps, for the reason that in the early stages of any merger there are many difficulties to be ironed out. It is seldom easy to get a large number of men, each of whom has been his own boss, to submerge their individualities and work smoothly together from the start for the greatest good of all concerned. I happen to know that when only four radiator foundries were put together to form the American Radiator Company, it was years before the old owners were able to adjust themselves. Once this was accomplished the merger has taken in many other companies with little trouble on that score.

It is largely this difficulty of management that accounts for what has been called the "hell period"—the early years during which many mergers fail to achieve the prophesied economies and sometimes even show smaller profits than did the members when operating as individuals. This is particularly true of the horizontal type of merger, for it is usually difficult to get so many former competitors to live together happily or even peacefully. Frequently a vertical merger starts off more smoothly for the simple reason that as buyers and sellers, the individuals have been accustomed to get along with each other. When, in the ordinary course of business, conflicts of interest have arisen, they have learned to compromise their differences. However, I have an idea that there may not be so much difficulty on this score in your industry, for I believe you all realize acutely the seriousness of the situation and are willing to go to great lengths to effect a cure.

To meet your immediate problems, therefore, I believe steps should be taken to form several well planned, economically sound mergers of the so called horizontal type. A variation of this form, called by some the "circular merger" composed of non-competing producers of complementary finished products which

can be sold as a group by a single sales force, is indicated as best for certain mills.

In many instances, even at the start, it may be well to combine the horizontal and vertical forms in one merger. Thus there might be in one group several spinning mills, several weaving mills producing similar or complementary fabrics, dyeing and finishing plants and certainly a successful selling company. In some instances, such vertical integrations might better come later. The important thing at the moment is to form strong horizontal groups to combat the more immediate difficulties of your industry.

Let us enumerate the advantages which will accrue to the cotton industry from the formation of these preliminary mergers.

Advantages of Mergers in the Cotton Industry.

First, it is beyond question that any industry is better off when there are a few strong and well managed concerns in the field than when several hundred, many of them small, poorly managed or downright irresponsible, are engaged in a battle royal. Competition between big fellows is less likely to be ignorant or malicious, and while it is apt to be strong, there is a good chance for each, if it is well managed, to get sufficient of the business to provide a fair profit.

Second, strong mergers will put the industry in a better position when dealing with powerful buyers. The consolidation movement among your customers has progressed far and will, I am convinced, go farther with great rapidity. Chain stores are powerful factors, much too powerful for most individual mills to cope with successfully. There are already a few embryonic chains of department stores. Much larger ones are ahead. In fact I have one under consideration for my firm at the present time.

It will take rather large and powerful mill groups using the most efficient methods and under highly intelligent management to stand a chance to make a profit from their dealings with such large, concentrated buying power.

Third, instead of a number of mills each making several constructions of product—which is always more or less uneconomical—each mill will be able to concentrate on one or a few constructions. That will tend to reduce production costs.

Fourth, if several mills making different but complementary products are grouped, they will be able to concentrate their selling through a single sales organization. One instance of this is a group of mills making sheets, pillow cases, blankets, draperies—in fact, all of the textiles which go into a bed room. This concern sells through one sales department to the buyers who handle bed room fabrics for the retail stores. It is an example of the so-called "circular merger." This type has, however, developed to a greater extent in other industries than in yours. Gold Dust and Postum are instances. I happen to know that the Postum Company, selling a large group of non-competing food products to groceries, has through distribution economies reduced its percentage sales expense 39 per cent in the past six years and its general administrative expense more than 25 per cent.

> "AS long as you produce semi-finished materials for some other concerns to process, the cards are stacked against you. The nearer you can come to the almighty ultimate consumer, the more intelligently you can merchandise your product and the safer and more stable your profits are apt to be. . . . . As producers of semi-finished products, you are forced into a position secondary to that of the concern which takes your product and turns it into a dress, a shirt or what-not in a form that the consumer can use."—From address of W. R. Basset.

Fifth, large, amply financed mergers can afford to carry on extensive research into merchandising problems. They can keep in touch better with the ultimate markets on questions of style and can afford advertising campaigns usually impossible to the mills as individuals.

In some cases, such horizontal mergers may prove to be the ultimate form, although I believe that there will be other developments. I believe that most of the existing mills in every branch of the cotton industry will in the end find themselves units in consolidations which will stretch from the cotton buyer at one end to the retail store or, at least, the garment manufacturer at the other.

That has already occurred in some instances, as you know. Among the garment manufacturers who own cotton mills is the Manhattan Shirt Company. A group of overall manufacturers is another. An oilcloth manufacturer and some tire makers are also mill owners. Marshall Field & Company and, I understand, some chains have discovered the advantages of owning cotton mills.

So there really is nothing revolutionary in my prophesy, except perhaps that I think it is a trend which will develop on a large scale—and perhaps become universal practice.

"Manufacturing Not an End in Itself."

Bluntly, I believe that the basic cause for much of your trouble in the past and present is that you have, perhaps through justifiable pride in your calling, come to think of cotton manufacturing as something of an end in itself.

Actually, when you think of it, it is really but a contributing element in the process of producing a finished product which the ultimate consumer can use. Most of you are producers of materials which must pass through other processes before they are of use to the ultimate consumer. There are exceptions, I know, but they are in the minority. As producers of semi-finished products, you are forced into a position secondary to that of the concern which takes your product and turns it into a dress, a shirt or what-not in a form that the consumer can use. The producer of raw or semi-finished product is in a peculiarly difficult position. His goods pass through so many other hands that they seldom are identified by the ultimate consumer as the product of any particular mill. It is the common lot of all producers who sell raw or semi-finished products to be in sharp competition with a host

of similar producers. Consequently, selling is largely a matter of price and the profit is apt to be low.

It must be fully realized that the sole purpose of business is to provide the ultimate consumer with goods in a form which he can use. The consumer is the all-important factor. It is his loyalty to a finished product which creates that most valuable asset—good-will for the producer of the finished fabric from which good-will toward the retailer who sold him the shirt, provided it is a good shirt. If the make of the shirt is advertised by the manufacturer the consumer may have good-will toward him but he has little or no good-will. The buyer of a shirt has a certain amount of the shirt was made, and still less for the producer of the original yarn from which the cloth was woven. Therefore, on the face of it, it is apparent that so long as you produce semi-finished materials for some other concerns to process, the cards are stacked against you.

The nearer you can come to the almighty ultimate consumer, the more intelligently you can merchandise your product and the safer and more stable your profits are apt to be. It is largely to achieve this end that I strongly urge as the final development completely self-contained, integrated consolidations of the combined horizontal, vertical and circular types.

"BECAUSE of the complexity of the cotton industry and the large number of units in it, I believe that it would be unwise to attempt to set up any consolidation in its ultimate form all at once. It would be much better to aim at a gradual growth—letting that final consolidation evolve through several steps, for the reason that in the early stages of any merger there are many difficulties to be ironed out. It is seldom easy to get a large number of men, each of whom has been his own boss, to submerge their individualities and work smoothly together from the start for the greatest good of all concerned."—W. R. Basset.

There will, of course, be other advantages to far greater degree than will be possible to the preliminary mergers I have discussed.

Economy is an Advantage.

The greatest of these is economy. In fact, I am convinced that unless a merger makes possible economies of production, distribution and finance, which are not attainable by the merged enterprises as individuals there is seldom any sound economic reason for a merger. As individual companies, the degree to which you can cut costs is somewhat limited.

In the various stages from the raw cotton in the field to the delivery of a finished product to the consumer, there are 84 business functions which involve expense. For instance, each concern up and down the line must do accounting work, collect accounts, incur buying and selling expense and so on. So long as each stage is under separate ownership, all of these operations must be performed.

If all of the concerns in all stages from the raw cotton to the consumer were under unified management, it is obvious that many of these functions could be eliminated, combined or centralized, thus reducing the total expense and either increasing the profit to the consolidation, reducing the price to the consumer, or both.

A few years ago I made a survey of the cotton industry to determine the extent to which such economies could be achieved by a proposed consolidation which would cover all functions from the buying of raw cotton to the purchase by the consumer.

I found that 14 per cent of these elements could be eliminated completely and 62 per cent of them greatly reduced. I leave it to you to decide whether such savings, possible only in a soundly conceived vertical merger, would be worthwhile.

Production is Another.

Furthermore, great advantages accrue from the ability of each element in a vertical merger to plan its production. Each mill knows definitely beforehand what and how much it will produce. It can schedule production months ahead.

The next mill in line is equally benefited by being sure of an uninterrupted supply of the right quality of materials in the right quantities at the right time, so that it too can plan its production effectively and economically.

The economies and other advantages from consolidation are in no wise mere theory. They have been proved many times. Those who have studied them most closely are generally agreed that the greatest possible benefit from a merger cannot be realized until the integration from one end to the other of the production and distribution stream is absolutely complete. That means that the consolidation movement in industry must continue until it has reached its economic limit. In your industry the limit at one end is obviously the raw cotton buyer. The limit at the other end is the retail store.

There is no reason even today why some of the other large stores and most of the chains should not follow the lead of Marshall Field & Company and own their own mills. Of course, so long as there remain large numbers of independent stores too small to use the output of even a small mill, many of you will not be able to consummate such greatly to be desired vertical mergers, but will have to remain content for a while with the good that comes from horizontal mergers.

But the time is not far off, I feel confident, when most of the department and clothing stores will be members of great chains. Certainly they will look about for mills to supply their needs. This has already been done by grocery chains. The Great Atlantic & Pacific Tea Company owns many factories. The plan has proved sound. When this comes about, we shall see mergers larger than any that exist at present. As a member of such a merger, you may find yourself one of a family not only of stores, but of woolen mills, clothing factories, shoe factories, tanneries and a multitude of others equally diverse.

Then with direct competition between mills eliminated, with economies of production and distribution realized, with close touch with the consumer effected, you will find yourselves in a less individualized but a far safer and more profitable place in the business world.

CURRENT TOPICS

This Matter of Population

AN interesting paper, one containing surprising deductions and almost startling forecasts, was read at the recent joint conventions of the National and American Cotton Manufacturers Associations by Warren S. Thompson, director of the Scripps Foundation at Miami University, Oxford, Ohio. The Foundation is making exhaustive studies of population and some of the findings, together with their meaning to industry, were narrated by Mr. Thompson. He declared that unless there is an unexpected change in present tendencies and the national policy as to immigration, growth of population in this country is going to be very slow in future. He predicts that the gain during the next seventy years will not be more than 50 per cent and that with that gain population will cease to grow at all.

Findings like those may seem to be, when only casually noted, mere interesting speculation of no particular importance, even if entirely sound. This, however, is a dangerously superficial and shortsighted way of dismissing the subject. Both production and consumption depend on people. Population changes affect values. There is little question that several of the big problems now facing the country arise out of changed tendencies and shifts of population. These lately have been much unlike ones of the past. For more than a century rapid growth in population in this country as a whole and in most communities could be taken for granted. Between 1860 and 1920, as Mr. Thompson points out, there was an increase of 400 per cent in the country as a whole. That increase warranted rapid expansion of facilities for feeding, clothing and housing people in this country.

Past increases owed in much part to immigration, now curbed and before long apt to be less than emigration. Growth by reproduction was for long extraordinary. But the American birth rate has been moving downward for several decades. Dr. O. E. Baker of the United Sates Department of Agriculture finds that it has fallen 20 per cent since 1915. According to his calculations, another 20 per cent drop would put the birth rate below that necessary for maintaining the population by reproduction. It is more likely than not to occur—perhaps in less than another fifteen years.

The falling birth rate accounts more than does increased earnings, according to Mr. Thompson, for the recent noteworthy rise of living standards. It is not that the average family has so much more to spend, but because it contains fewer persons to be supported by its income, that persons as a rule are consuming more. The number of young dependents has declined. But before long, he says, this will be offset by proportional increase in dependents because of age. Increase of consumption, he argues, will be dependent in future almost wholly on a rising per capita absorption of goods. He doesn't think that export of surplus goods is a promising way out, because receding growth of population is evident throughout the world. It would be much better, he thinks, to concentrate on raising per capita consumption in this country.

What Mr. Thompson may have overlooked is the fact that per capita consumption in this country already has been possibly over-stimulated. Potentially it is of course without limitation. How far people may be induced to want more things badly enough to work hard in order to get them is unknown. Per capita consumption in this country is many times that of the world as a whole, several times that of civilized countries in the Old World. If word per capita consumption were brought up in a century's time to that in the United States today there would be, despite the intensifying effect of receding population growth on competition in general, ample markets for all the surplus goods this country can produce meantime.

It should not be forgotten also that per capita consumption, especially when stimulated artificially, does not rise uniformly as to products. For example, the rise in America in recent years has been accompanied by actual falling off of per capita consumption of certain standard products. Most of those so affected are what used to be rated as "necessaries", demand for which, it was thought, invariably mounted with rising living standards. Per capita consumption of food, in calory terms, is less in the United States now than it was twenty years ago. This had much to do with bringing on the farm problem.

There are many puzzling phases of population. When it was announced most thinkers accepted Dr. Malthus' law of population—that growth in number always tended to outrun the food supply—as incontrovertible. The Malthusian law dominated social and to a great extent industrial thought for more than a century. Now it seems evident that the "law" is without validity; it certainly is alterable.

And so the record to date argues as to nearly all deep findings and long-distance forecasts as to popu-

WORK

James Russell Lowell

No man is born into the world whose work
Is not born with him; there is always work
And tools to work withal, for those who will;
And blessed are the horny hands of toil.

The busy world shoves angrily aside
The man who stands with arms akimbo set
Until occasion tells him what to do;
And he who waits to have his task marked out,
Shall die and leave his errand unfulfilled.

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TEMPE, ARIZ.
S. J. Carter, Mgr.

lation. Few of those of the past were sustained by events. It is clear, however, that assumptions that were so safe up to ten years ago that they still are taken for granted, are of doubtful warrant. Many of the country's productive troubles owe to the taking for granted that population increase still may be counted on as of yore.

"A Plank with Splinters In It"

THE Federal Farm Board set up by Congress to handle $500,000,000 of public funds is apparently no exception to Henry Ford's saying, anent such bodies, that "a board is a plank with splinters on it". There are a good many splinters on the organization set up by Congress for solving the farm problem. Yet the country should be thankful that the extremely dangerous ones known in former discussions as the equalization fee scheme and more recently as the debenture plan were torn off before the contraption was completed. Since the members of the board are named by President Hoover, who no doubt will closely supervise the establishment's operations, it is unlikely that any of the remaining splinters will be allowed to do much harm. Waste of public funds is about the worst to be expected. However, the farm board, with its rather loose powers, might inject a good deal of disorder, under certain conditions, into complex spheres of raw materials distribution, such as those of the grains and cotton.

Under all the circumstances, the arrangement finally agreed on is about the best that could be done by the Federal Government for agriculture. Essentially, it is a cooperative marketing scheme. One of the functions of the board is the promotion of cooperative marketing organizations for the handling of farm products. These organizations now amount to a great deal and in general they have been helpful to farmers and, to some extent, of industry. They have grown naturally and without aid of the rather deadening hand of Government. If the farm board does more than promote and stimulate, an effect of the relief scheme will be to make participating farm cooperatives *quasi* agencies of the Government. This in the end may do the farm cooperative movement more harm than good. Many cooperative leaders are not enthusiastic for the relief scheme.

The key feature of the scheme is the board's authority to set up and finance so-called stabilization corporations for buying up, holding and selling surplus products of the farms. While technically independent, these corporations will be in much part governmental. Their operations might have at times a "psychological" effect on prices but it is quite doubtful if they can help farmers much. The recent experience with wheat is illustrative of the danger adhering to attempts to force prices upward by merely withholding what has been produced from the market. Control to be effective must be exercised at the source, at the point of production.

Whatever it achieves, which is not likely to be much, the Federal Farm Board, if it runs true to form, will become a fixture of Government, thus adding to the array of establishments of similar kind and doubtful worth that, like Tennyson's brook, go on forever, at always increasing cost to the taxpayers.

The Science of How Not to Do It

THE average Federal Government board is comparable to the British courts of chancery as satirized in the middle of the last century by Charles Dickens. They pursued, said the novelist, the art of How Not to Do It.

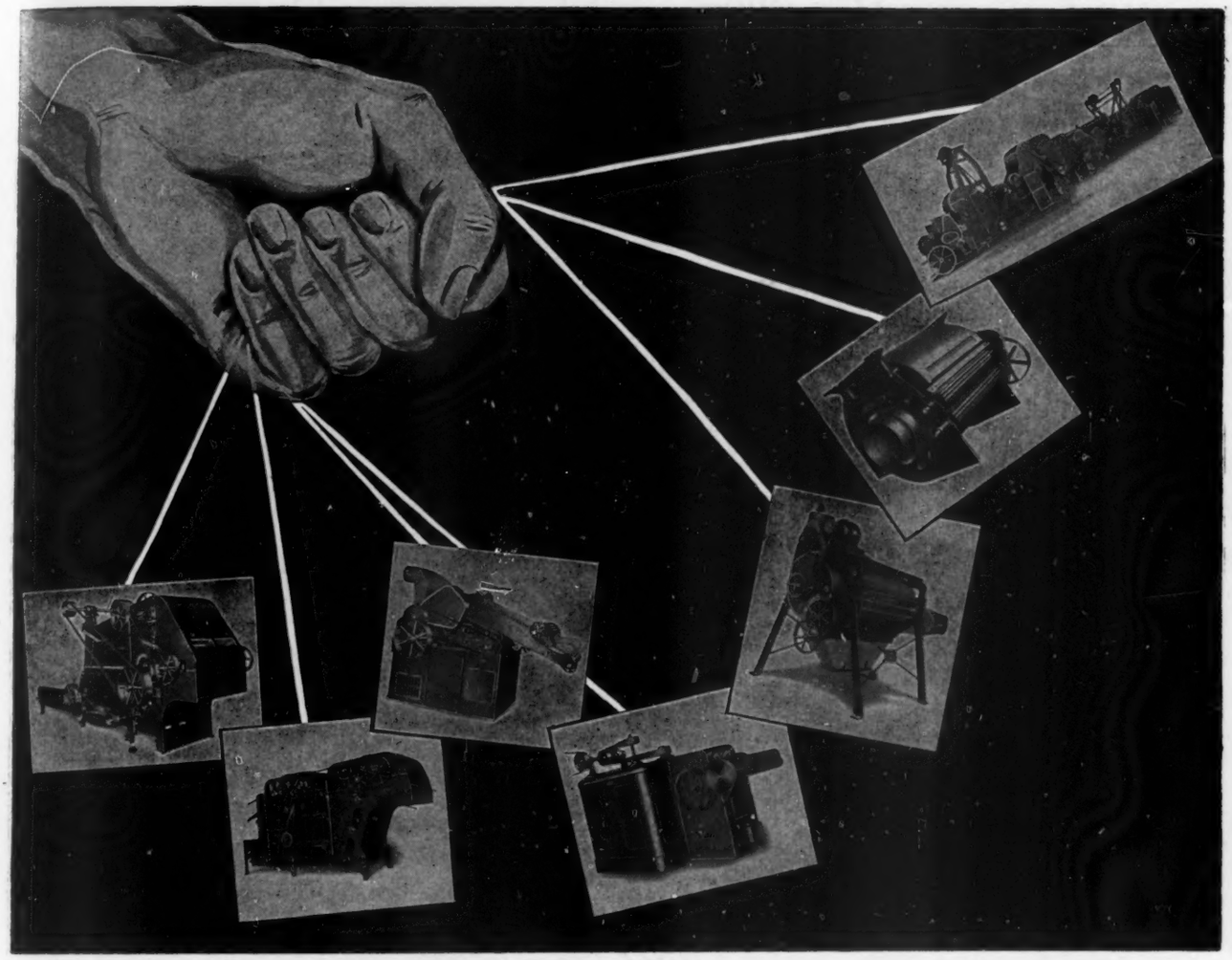
An example of the same kind of pursuit is afforded by the Interstate Commerce Commission's railroad valuation work, on which the United States Supreme Court recently rendered its first decision.

This work began in 1913. The record shows that those who caused it to be undertaken declared that finding the value of the railroads of the country would cost the Government not more than $2,500,000, and the railroads about the same. They estimated that the job could be done in three to five years. More than $30,000,000 has been spent by the Government, and about $100,000,000 by the railroads, on the undertaking, which, after more than fifteen years of wandering around the circle, is not half-finished. In fact, it is agreed that the job is not finishable in the way that it is being pursued. The Interstate Commerce Commission now treats it as a continuous and endless enterprise.

It was hoped that the Supreme Court might clear up some of the befuddlement. But its decision in the so-called O'Fallon case clarified nothing. The court merely said that the valuation must be arrived at according to rules it set up thirty years ago. These it construed to mean that in establishing valuation the big change in the buying power of the dollar cannot be ignored. The court, however, failed to indicate the weight which should be given the various factors which it reasserted must be taken into consideration. Thus there will be grounds for having the court pass on every final valuation which may be made. At the rate of one decision in fifteen years, litigation alone might be spun out through centuries and centuries of time.

What has been done and decided makes it quite clear that, for the purposes for which it was undertaken, the work is wholly useless, though, if finishable, it might be of worth for other purposes. It was begun on the assumption that the railroads were over-capitalized. This has been proven untrue as to the railroads as a whole. It is apparent that any final valuation in line with the Supreme Court's rulings would be beyond what could be sustained under present conditions, with the railroads facing a growing competition from highway conveyances, by rates. Valuation won't furnish any basis for general rate lowering; it is more likely to do the contrary. Valuation might expedite consolidation of the roads into bigger groups and some kind is necessary to the administration of the recapture clause of the Esch-Cummins Act.

But the consolidation and recapture arrangement features of the Act, passed nearly ten years ago, seem to be going the circumlocution way of the valuation work.



SYNCHRONIZED CONTROL

DEFINITELY LOWERS OPERATING COSTS

ONE of the greatest cost-reducing developments of the century is offered by the Saco-Lowell Shops Opening and Cleaning Systems. With all machines, from bale breaker to finisher picker, under synchronized and automatic control, high production of better quality is assured. At the same time automatic conveyors and distributors materially reduce labor costs. Overhead costs are reduced in many directions.

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SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 Milk Street, BOSTON, MASS.

CHARLOTTE, N. C. GREENVILLE, S. C. ATLANTA, GA.

What the Southern Mills are Doing

PLANS for an expansion which will double the capacity of the Opelika, Ala., plant of the Pepperell Mfg. Co., have been announced. The new unit will have 20,000 spindles and 500 looms equipped for the production of print cloth, and will give the Opelika plant a total of 50,000 spindles.

Work has been started on the construction of the plant of Goodyear Tire & Rubber Co., at Rockmart, Ga. According to specifications, the main building will be 750 x 150 ft. and it will be three stories high, connected with a warehouse 250 x 150 ft. The plant will be equipped with 50,000 spindles for the production of tire cord and fabric. The mill village will consist of 400 houses costing $750,000.

Plans are now being made for the removal of the entire plant of the Darlington Textile Co., Pawtucket, R. I., to Newton, N. J., and Charlotte, N. C.

Sauquoit Spinning Co., Gadsden, Ala., has placed contract for the construction of a conditioning room, which is to cost $10,000. Robert & Co., Inc., are the engineers in charge.

Contract has been let for the new plant which the North Carolina Finishing Co., of Yadkin, N. C., proposes to build, to Potter & Shackleford, of Greenville, S. C. Work will begin as soon as the necessary parts can be assembled. J. E. Sirrine & Co., are the engineers in charge.

Work on the construction of the Fair Forest Finishing Company's finishing and dyeing plant six miles west of Arcadia, S. C., will begin at an early date, as contract was recently let to the Fiske Carter Construction Co. The contract is for approximately $175,000. Lockwood Greene Engineers, Inc., are the engineers in charge.

The installation of a Cooper Hewitt lighting system in the weave room, and the equipping of a card with Platts metallic card clothing, mark the recent addition of equipment in the textile school of the North Carolina State College. Tests will be made by the students on this clothing as part of their regular work in carding.

The Eastside Mfg. Co., of Shelby, N. C., have placed orders with Borne Scrymser Co., of New York City, for their "Breton Minerol Process" for oil spraying raw cotton.

Contract for an automatic sprinkler system in the new opener room and dust room, storehouse, waste house, etc., at The Kendall Co., Addison Division, Edgefield, S. C., has been let. These new buildings were designed and are being erected under the supervision of Lockwood Greene Engineers, Inc.

Plans have been completed for the addition to be made to The Hanes Dyeing & Finishing Co., of Winston-Salem, N. C. The addition will be used for storing finished and unfinished goods and will be one story, brick construction. Lockwood Greene Engineers, were the engineers.

Plans are being prepared for the erection of a school, donated by H. W. Hack of the Joanna Cotton Mills, Goldville, S. C., to be known as Joanna School. The school will cost approximately $40,000, and will be of Colonial type, brick veneer, and one story in height. It will house an auditorium with seating capacity of 600. There will be 13 class rooms. Loockwood Greene Engineers, are the engineers.

Goodyear Tire & Rubber Co., of Akron, Ohio, are having plans prepared for the enlargement of the American Textile Co. plant at Atco, Ga., which was recently purchased. The construction of 80 new cottages and the installing of $1,000,000 worth of machinery is soon to take place. Robert & Co., Inc., are the engineers.

The installation of additional winding equipment was made by Standard-Coosa-Thatcher Co., of Chattanooga, Tenn.

The contract has been let to Wagar & Co., Atlanta, Ga., for the construction of the proposed new cotton mill and warehouse building which is to be erected at Gulfport, Miss., for the Walcott & Campbell Spinning Co. The main mill building will be two stories and basement in height, measuring 415 x 100 ft., while the warehouse will be one story in height, measuring 150 x 100 ft. Robert and Co., Inc., Engineers.

Work on the construction of the addition to be made to the Republic Cotton Mills at Great Falls, S. C., is expected to start immediately. The contract has been awarded to the Fiske-Carter Construction Co., Greenville, S. C. The construction is to be of the most modern textile type, and is to house 15,000 spindles. The cost of the building is to be near $600,000.

The bleachery of the $2,000,000 establishment of the Rock Hill Finishing Company's plant at Rock Hill, S. C., is expected to soon be under construction, as the contract has been awarded to the Brown-Harry Construction Co. of Gastonia, S. C. The plant's operation will begin early next year. Lockwood Greene Engineers Inc., are the engineers.

The Mandeville Mills, of Carrollton, Georgia are planning a complete electrification of all machinery. Contracts will be let shortly. Robert and Co., Inc., are the engineers.

A new weaving shed is to be added to Roxboro plant of Collins & Aikman Corp., Roxboro, N. C. The contract for 375 tons of steel has been let.

Statesville Cotton Mills, Statesville, N. C., erect two story, 75 x 200 ft. weaving mill.

Brookside Mills, Knoxville, Tenn., will install two single retort underfed stokers and two Sterling type boilers; contracts have been let to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and to Babcock & Wilcox. Robert & Co., Inc., are the engineers.

Cotton Comment by H. & B. Beer

New Orleans, June 15th, 1929.

WITH cotton ruling at about value at present, and because of the uncertainty as to the future progress of the growing crop and its final outturn, there is apparently a mixed feeling in the cotton market as to the future course of prices.

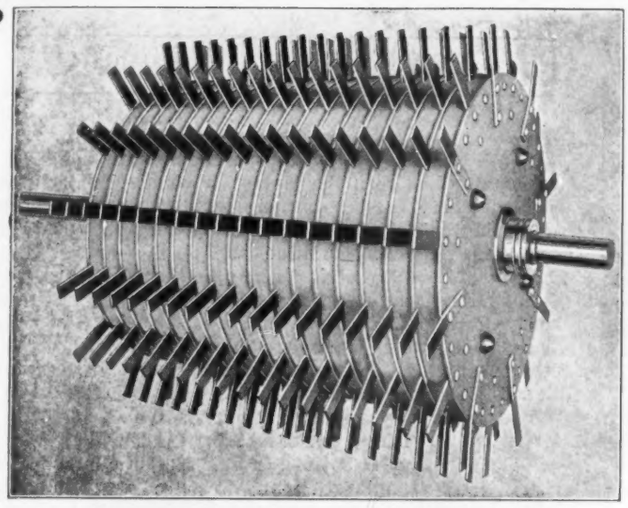
Statistically, American cotton appears to be in a comparatively strong position; the world's visible supply yesterday amounting to only 2,727,472 bales against 3,366,795 last year and 4,306,798 year before last, but the apparent indifference of the market of late to the recent bullish domestic consumption returns and the recent government bullish boll weevil report is attributed to several features in the situation—ideas of a large acreage, perhaps of record breaking proportions; prospects of a liberal use of fertilizer; and a good season in the ground, especially in the important state of Texas, creating the belief that a large, perhaps a very large crop may be made this year.

Private acreage estimates issued so far range, as to the probable increase, from about one to six per cent, averaging about 3 1-2 per cent. Last year the acreage planted to cotton was 46,946,000 acres, of which 45,341,000 were picked. This year the government's acreage estimate will be released on July 8th.

The first private crop estimate issued this year, as of the last week in May, pointed to a yield of about 15,400,000 bales. Therefore, so far there is no assurance of a large crop, or say 16,000,000 bales, much less of a very large yield, or say 17,000,000 or over, but a very large crop is possible if the acreage is of record breaking proportions, if the right kind of weather is had during the remainder of the crop making season, and if boll weevil are not numerous and destructive.

But the emergence of boll weevil is reported to be comparatively large this year at many points in the interior, as noted by the following press report from Washington, which is confirmed by the data recently furnished by the government: "Report on boll weevil emergence in southern states, announced by the Department of Agriculture yesterday, showed a greater increase over figures compiled at this period in preceding years, all but four stations reporting a higher percentage of emergence than they have in any year since 1924. The department called attention, however, that summer climatic conditions and extent of employment of control measures will materially influence the damage to the crop, which may not necessarily be in proportion to the early emergence."

That a moderately large American crop will likely be required by the world for next season is indicated by private



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BUILDERS OF COTTON PREPARATORY AND SPINNING MACHINERY

New Plant of Gastonia Brush Co.

The above photograph shows the new plant of the Gastonia Brush Co., at Gastonia, N. C. The company which manufactures textile brushes has already occupied its new quarters.

estimates as to the probability of a large world's consumption of American cotton this season—about 15,250,000 bales exclusive of linters. Last year's production (ginned) of lint, in bales of 500 pounds gross weight, was 14,478,000 of which Texas contributed 5,106,000.

TOTAL AVERAGE RAINFALL IN TEXAS.

In Inches — Year—	1929	1928	1927	1926	Normal
May	7.78	3.37	1.64	3.34	3.66
Nov. to May inclusive	21.43	13.14	15.96	19.60	17.16

Generous rains in Texas, when followed by average weather conditions during the remainder of the crop making period, are usually productive of a good yield per acre in that state.

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK MAY STATISTICS.

Yards—	May 1929	April 1929	May 1928
Production	341,370,000	283,878,000	349,325,000
Sales	278,335,000	302,520,000	269,845,000
Shipments	326,121,000	277,098,000	326,244,000
Stocks	367,340,000	352,091,000	441,508,000
Unfilled orders	382,512,000	430,298,000	305,645,000

May production rate was 3.8 per cent below April, sales were 8.5 per cent of production, and shipments were 95.5 per cent of production. Stocks increased 4.3 per cent, and unfilled orders decreased 11 per cent.

CENSUS REPORT

United States— Bales	This Season	Last Season
Consumption lint, May	668,229	577,384
Consumption linters, May	80,145	62,836
Consumption including linters	748,374	640,220
Consumption lint, 10 months	5,982,208	5,883,843
Consumption linters, 10 months	713,455	649,370
Consumption including linters, 10 months	6,695,663	6,533,213
Mill stocks May 31st	1,477,308	1,330,880
Stocks in public storage May 31st	1,847,688	2,258,763
Stocks in mills and pub. stg., May 31st	3,324,996	3,589,643
Active spindles during May	30,910,282	28,948,144

From now on the market will likely be governed more than ever by weather condition inland and activity of weevil. As to future weather conditions, no one can tell at this time as to what nature has in store for the future. A dry, hot Summer, with an occasional rain to nourish the plant, would undoubtedly make conditions favorable for holding the weevil in check and for making a large, perhaps a very large crop. On the other hand a wet Summer would probably make for multiplication and spread of weevil in which case serious damage to the growing crop would be possible.

American Fast Dyes.

A small booklet entitled "American Fast Dyes—Some Facts," has just been published by the Franklin Process Co., Providence, R. I. They state that the booklet is a reprint of articles which have appeared in various trade publications from time to time which originated from a number of different authoritative sources.

New England Mill Situation

June 15th, 1929.

NEW England cotton mill production in the past six months has been the largest in volume for some years past and there has been a more rapid movement toward reorganizing and liquidating properties that have been in an uncertain financial condition due to the depressions and changes of recent years. As may be seen from any printed list of mill share prices the asking or bid values are ridiculously low, even some of the soundest and best earning plants being quoted from 40 to 50 per cent under relative values for anything other than textile stocks. In several instances there are mills whose shares are quoted below par although they are paying regular dividends and have reserves approximating their capital.

This condition is not confined to New England, however, as similar instances are found in share lists for southern mills that are well managed and financed, and for numbers of English mills well known by reputation to many American manufacturers. Had a well organized propaganda been at work to depress textile share values in keeping with bear operator tactics on the Wall street exchanges, it is doubtful if lower prices could have been reached. That the situation has been attracting the attention of some very shrewd investors is no longer denied.

It became known in the past few weeks that the plans of Jerome A. Newman of New York for the consolidation of at least 1,000,000 spindles and complementary looms in Fall River and New Bedford fine goods mills were being given serious consideration by a number of mill treasurers who have hitherto paid little attention to rumors of mergers or attempts to bring about mergers. Family connections of Mr. Newman own the Howard Arthur, (formerly Seaconnett mills), of Fall River, that were bought very cheap a few years ago and have been physically equipped and soundly financed. The plants are being operated at a profit on special fabrics. Newman himself is well acquainted with mill properties and converting.

So far as his plans have become known, he proposes to combine fine gray goods mills that have earning power, and issue securities to be exchanged between the units taken over, on a basis of bonds that will be convertible into stock, and common stock. He has talked over some parts of his plans with many treasurers but as yet no definite offer has been made. What he has learned of the properties wanted is being studied by financial advisers in New York, some of whom are associated with the Central-Hanover Trust in New York, to whom he refers those who have any reason for inquiring into his financial responsibility.

Mills that are mentioned as possible units to be merged include the King Philip, Parker, Pilgrim, Luther, and Davis of Fall River, and Dartmouth, Nashawena, Butler, Quisset, and some others in New Bedford. It is recognized that managements of some of these mills are not averse to consolidations if brought about on a sound basis of stock exchange. Newman expects that many of these managers will continue their active interest in the properties, until a consolidation has been perfected that will operate on a competitive and economical basis. Mills not having earning power under present conditions are not sought. The management of some of these mills include men who are well on in years, but who would not consider retirement that did not protect stockholders fully. It is known that back of this proposed plan there is an investment trust controlling shares in many textile corporations. Many of these shares were bought solely because they were known to be safe and very cheap.

While it may be many weeks or months before the Newman plans are worked out there is no longer much question in important quarters that they have merit in that they do not seek ownership for stock exploitation. If the plans go through the merger will be perfected from the gray goods standpoint, and other phases of improving the worth of the properties from a long time investment point of view will be considered later. This merger is but one of many that have

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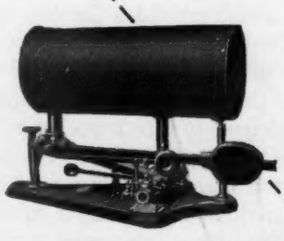
These quotations are taken at random from the numerous letters received every year from every line of industry. We have helped them solve their steam drainage and boiler feeding problems. We have helped them increase their operating efficiency and lower their fuel costs. Let us do the same for you.

Somewhere, at some time, we have worked out successfully the same situation you are up against now. If you desire, we will be glad to make a survey of your particular requirements and provide you with our recommendations. *Write for complete information.*

MOREHEAD MANUFACTURING CO.
DEPARTMENT C DETROIT, MICHIGAN



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been talked of more earnestly in financial circles in recent weeks.

Plans have been completed by the directors of the Flint and Wampanoag mills of Fall River, for presenting to the stockholders propositions for merging the ownership and management on a basis of increasing Flint mill shares from 11,600 to 13,000, par value $100, the increase to provide for the purchase of the Wampanoag on the basis of one share of Flint for seven of the Wampanoag. The Wampanoag directors refused to accept an offer of the Massachusetts Thread company of $9.25 per share. The properties to be merged adjoin each other and both boards of directors and managers are in favor of the project.

The Arkwright Mill Corporation of Fall River, a unit of the United Merchants and Manufacturers, Inc., (the Loring merger), has purchased the Chace mills of Fall River. A previous offer was withdrawn owing to difficulty encountered in securing certain wanted water rights from the city of Fall River. The plant changes proposed include a reduction of spindles from 114,000 to 80,000, and looms from 2600 to 1,000. Operation will be on a two or three shift basis. Combers, Crompton & Knowles looms, and printing machines will be installed for the production of fancy curtain materials.

Stockholders of the Troy mills of Fall River voted on June 10 to sell the property and dissolve the corporation. A plan is reported as afoot in Fall River for the merger of the Davol and Richard Borden mills, adjoining properties and it is also understood that the Loring interests will take over the Narragansett, and Weetamoe mills. The liquidating committee of the Everett mills of Lawrence, Mass., have received an offer for the mill properties, all the machinery having been sold some time ago, and transferred South.

The Firestone Tire interests, owning and operating a plant night and day at Fall River, have given notice of an intention to add substantially to the plant there during the coming year. The American and Algonquin printing companies at Fall River have turned out the largest product this year to date in their history and are still operating some departments at nigh to complete deliveries.

The Amoskeag Company is reported to be employing between 11,000 and 12,000 people at Manchester, N. H., but nothing like normal gingham output is reported. Orders taken for Fall for staple ginghams and for 19,000 range goods are reported to have been substantially better than a year ago. The departments engaged on fancy flannels are fully employed and are being urged to increase deliveries. The Nashua company of Nashua, N. H., earned its regular dividends for the first six mouths of the year and has been operating some departments overtime.

At New Bedford, the output of fine fancies for the first four months of the year was 35 per cent in excess of a year ago. Recently, as orders for plain goods have run out and new orders obtainable showed a loss, there has been some slowing up, and curtailment is being carried on individually. One of the Nashawena mills has been closed until business improves. The large proportion of fancy work being called for in fine yarns has enabled some mills to book considerable business ahead. Normally, there should be a substantial increase in orders for gray goods for Spring in the next four weeks.

Sheet and pillow case mills are running to 65 per cent total capacity and will continue on that basis until November unless trade broadens. The Pepperell company has reinstated its fine combed yarn sheets and pillow cases with Jacquard woven borders. The Wamsutta fine lines continue to sell to capacity.

In Maine, the mills are running to an average of 80 per cent capacity, according to latest reports. The York company at Saco, Me., is getting into working shape again, fully 1,000 looms now being active. In Salmon Falls, N. H., across the state line from Saco, a tire fabric company has started to produce under the management of Andrew G. Pierce, 3rd., the son of the President of the American Woolen Co., the event was celebrated at the plant by a party organized by the operatives to express appreciation for the restoration of activities in the town.

Rhode Island and Connecticut mills continue to produce full time steadily. There are some instances where fancy work has run out and new orders have not yet been booked, but on the whole the mills are doing better than those in Massachusetts. Rhode Island now produces such a wide variety of textiles, silk, rayon, worsted and woolen, cotton, and some specialties in mohair and ramie, that its cotton producing facilities seem minimized. Yet the B. B. & R. Kight and Lonsdale properties, the largest units in the state have operated more fully in the past five months than at any time in three years.

The finishing plants in New England, especially those having printing machinery installed, have produced the greatest yardage volume in their history since the first of the year. Work has begun to lack up, seasonally, but some plants are still operating at night. A great deal of fancy work is being handled, notably rayons, silk mixtures, and new types of shirtings.

At the present time there is a general quieting down in business. This is entirely seasonal and a normal result of the immense yardages turned out in a wide variety of textiles in the past half year. Mills are joining in a curtailment movement embracing the whole Fourth of July week and there is a strong desire in many centers to extend the curtailment plans to include a restriction of four week's output between June and October.

Considerable ill-feeling has been stirred up among New England manufacturers by a charge made in a Baltimore paper to the effect that they were encouraging the strikers who have been pestering the South for some weeks past. The National Association of Cotton Manufacturers and the American Cotton Manufacturers' Association officers have denounced the statements. It is undoubtedly true that union agitators centered at New York have been largely responsible for the southern disturbances, but anyone at all familiar with New England manufacturing sentiment can appreciate the anger stirred up by an accusation that New England mill owners would have anything in common with the socialists in textile unionism.

A Service for Mill Executives

MILL executives are often too busy to compile for themselves into a convenient and readily accessible form the manufacturing details of their plants. To be able to know by glancing at a personal note book the specifications of the various machines with their speeds, details of draft, twist, production, etc., cloth construction details, rates of pay, etc.—is something mill men will find of great value in their daily work. Such a note book, properly compiled and filled in, provides them ready answers to details which often require a consultation with an overseer. If a man is talking with some mill friend, such a note book enables him to compare his speeds or draft or pay, etc., with what the other fellow is doing, in a very convenient way.

Mill executives, therefore, will be interested to know of a service recently instituted by George C. Welch of Lancaster, S. C., which provides for the following service: A man trained in such statistical work comes to the mill, compiles the information relative to manufacturing details, puts this first into a convenient form and then further condenses it into a pocket note book. Mr. Welch does the work personally. He has had wide experience in cotton manufacturing, is thoroughly familiar with the various departments of the mill and its allied work. Executives interested in this service should address their communications to Mr. Welch direct.

Figure your lubrication costs in terms of H. P. saved

It is *not* the cost of the lubricants that counts. The actual price of oil and grease consumed annually by any one mill is relatively insignificant. What *does* count heavily is the saving which *can* be effected through a proper understanding of lubricants and their use.

Texaco lubricating engineers, for instance, are thoroughly familiar with every type of knotty lubrication problem. They are specialists in an age of specialists and they have a complete line of Texaco Lubricants from which to select. Because they measure lubricating costs in terms of H.P., they have been able to effect unbelievable reductions in power consumption in many textile mills which had been operating for years on what was considered a satisfactory basis.

Texaco lubricating engineers are retained by The Texas Company to cooperate with you in every way. No matter what your range of operation—no matter where your mill is located, it will pay you many times over to avail yourself of this *free specialized service.*

And remember, there is a Texaco lubricant for every purpose!

TEXACO LUBRICANTS

THE TEXAS COMPANY, 17 Battery Place, New York City

Offices in Principal Cities

THERE IS A TEXACO LUBRICANT FOR EVERY PURPOSE

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

P. A. Smith and Mrs. Smith were killed while returning by automobile to their home in South Carolina from a visit to Atlanta on Wednesday, June 5. The Smith machine was overturned by a car driven by Mrs. Bona Allen, Sr., the accident occuring near Lawrenceville, Ga. Mrs. Smith was killed instantly, while Mr. Smith died the following morning in a Winder hospital. Mr. Smith had been general superintendent of the Loray Mills of the Manville Jenckes Co., Gastonia, N. C.

W. P. Dutemple

Webb Durham

Wm. P. Dutemple, formerly southern agent for the Whitinsville Spinning Ring Company, is now assistant treasurer in charge of sales, of that organization, and will spend the greater part of his time in New England. He has been succeeded in the South by Webb Durham, formerly superintendent of the Long Island Cotton Mills, Lincolnton, N. C.

S. J. Colvard, formerly night overseer of spinning and spooling at Columbus Mfg. Co., Columbus, Ga., is now overseer of spinning at Manville-Jenckes Co., of Gastonia, N. C.

Edwin H. Pierce, formerly vice-president and general manager of the Niles Tool Works Company, of Hamilton, Ohio, has been made vice-president and general manager of the Atwood Machine Company, Stonington, Conn. Mr. Pierce was for many years with the United States Steel Corporatibn as superintendent of their New Haven works and as superintendent of the South Works of the American Steel & Wire Co., Worcester, Mass.

Ernest C. Morse has been appointed executive in charge of advertising, educational activities and fabric promotion with the American Bemberg Corporation. For the past two years Mr. Morse has been in charge of the New Uses Section of The Cotton-Textile Institute.

J. R. Manly has been promoted from overseer of carding to general superintendent of the Anderson Cotton Mills, Anderson, S. C.

F. J. Clark, formerly superintendent, has been made vice president of the Anderson Cotton Mills, Anderson, S. C., succeeding George E. Spofford.

J. E. Gunter has been promoted from second hand to general overseer of carding at the Anderson Cotton Mills, Anderson, S. C.

P. F. Parkman, formerly overseer of weaving at the Toxaway mill, Anderson, S. C., has accepted a similar position at the Anderson Cotton Mills, Anderson, S. C.

G. W. Coster has been promoted from night overseer of carding and spinning to night superintendent at the Anderson Cotton Mills, Anderson, S. C.

M. M. Wikle has resigned as assistant superintendent of the Anderson Cotton Mills to accept a position in Augusta, Maine.

J. M. Freeman, formerly overseer of weaving at the Ivey Mills, Hickory, N. C., has accepted a similar position with the Saratoga-Victory Mills, Guntersville, Ala.

E. A. Shefield has accepted a position as superintendent at the Walton Hosiery Mills, Statesville, N. C. He was formerly superintendent at the Bismark Hosiery Mills, Carthage, N. C.

George C. Cauble was recently made agent of the Volunteer Knitting Mills, Athens, Ala.

H. M. Kirby, of Athens, Ga., is now overseer of carding and spinning at the Harris Cotton Mills, Eatonton, Ga.

C. R. Barton, of the class '29, in the Textile Department, at Clemson College, Clemson College, S. C., was awarded the medal given by the National Association of Cotton Manufacturers.

J. W. Horner has become Atlanta agent for Platt Freres, manufacturers of Platt's metallic card clothing. He will represent the company in the territory of Georgia and adjacent sections.

H. C. Arnall, prominent mill magnate of Newnan, Ga., died at his home Sunday, May 12. Mr. Arnall had been failing in health for the past few years, but had remained very active in business.

William D. Purse is now representing the Forrest Mercerizing Co. of Gloucester, N. J. Mr. Purse is well known to the knitting industry throughout the South, having been selling to this trade for a number of years.

Eric Cordin, who has spent his entire career in the knitting industry, and is well known in the South, West and New England States, has become affiliated with the Fidelity Machine Company. In his new capacity he will be responsible for the sales in the South and in the New England States.

H. B. Nutting, who has been in the belting business in the South for the past fifteen years, has opened a direct branch in Gastonia, of the Charles A. Schieren Company, manufacturers of Duxbak leather belting.

Dr. Vasser Woolley, Sr., who for the past few years has been a prominent textile chemist, and helped organize the Seydel-Woolley company, chemists, died May 22nd at his home in Atlanta. He was treasurer of the Seydel-Woolley Co. at the time of his death.

Walter Toy

H. B. Nutting

Walter L. Toy has been appointed vice-president of Scott & Williams, Incorporated, 366 Broadway, New York City. Mr. Toy, who has many friends in the industry, has been associated with this concern for 20 years. At the beginning of this time, he was located at the firm's factory in Laconia, N. H., studying the fundamentals of the hosiery machine business. With this background he went to the Boston office for a year, and since then has been at the New York office in charge of sales. His many friends both in and out of the industry, will be pleased and gratified to learn of this deserved promotion.

E. Trammell Combs has been transferred from superintendent of the Columbia Cotton Mills, Columbia, Tenn., to the superintendency of the Shelbyville Mills, Incorporated, Shelbyville, Tenn.

ANNOUNCING

A new and modern plant to meet the increasing demand

To meet the increasing demand for Gastonia Textile Brushes, we have equipped our new and modern plant with the latest type machinery.

This expansion is in line with the policy of this company, the officers of which are engaged in but one line of endeavor, and that is to supply the textile industry exclusively, with the best quality of brushes for all purposes that money and skill can produce.

If you are not already using Gastonia Brushes, write for our new catalog and samples.

Gastonia Brushes are higher in quality, yet they are no higher in price.

GASTONIA BRUSH COMPANY

GASTONIA, N.C.

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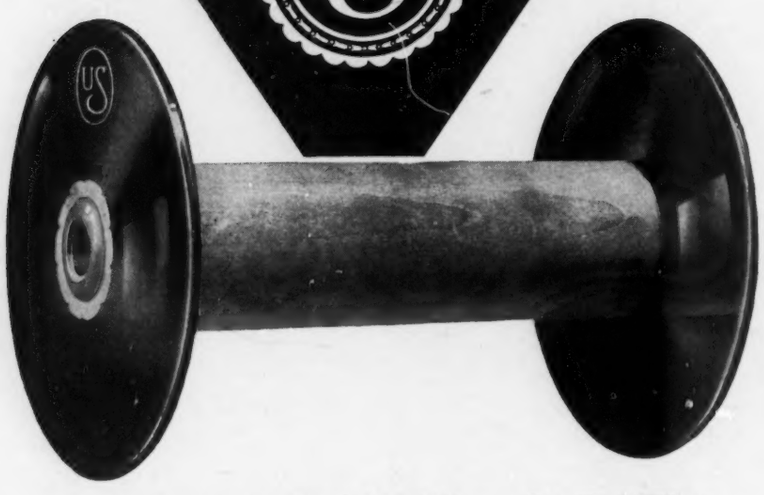

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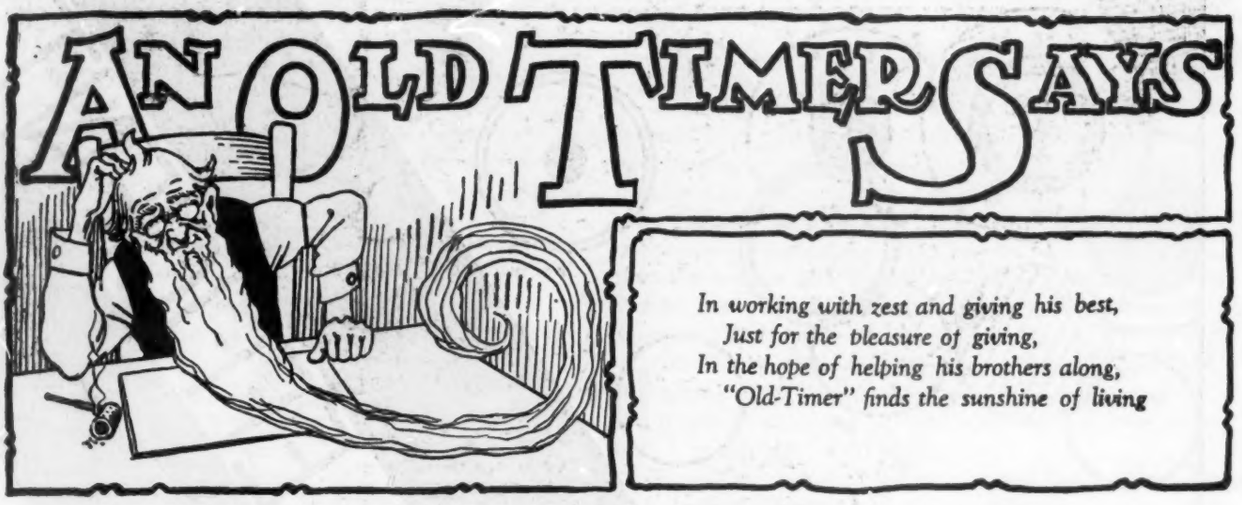

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brothers along,
"Old-Timer" finds the sunshine of living

Who *Said* a Man Is OLD at 40?

THIS sounds like someone stepped on "Old-Timer's" toes and he's using this page to get back at him. We first thought the old gentleman was getting "childish" and peeved, but in reading on we found that, as usual, he has in this article a moral with a dynamite kick in it, and we know the reader will recognize it. Don't forget "Old-Timer" is not writing these for pastime. He's a busy man and spends his "spare" time (if any) going fishin' and things like that. They are written for YOU, and the time is wasted if you do not apply his writings to yourself and your job.—The Editor.

CONFOUND if I can stand it any longer! I'm just about to cuss, or explode, or something!

"What ails you, Old Timer?" I can hear you say. "Come on and explode, if you want to, and let's have what's on your mind."

It's not on my mind; that is, I don't think it is. I am just simply disgusted, surprised and astonished at the attitude which some supposedly intelligent people have taken toward this very important and most vital problem.

When the newspapers and magazines took it up, and even editors spread themselves, I tried my best to pay no attention to their ravings, thinking they would soon yell themselves hoarse and shut up—

"Well," you reply, "for the love of Mike stop talking long enough to tell us what you are talking about—cows, horses, looms, cards or what?"

Certainly I will, but every time I start to even say it I get so confounded mad!!!—

Anyway, what I am talking about is, all this fuss that the magazines and papers are stirring up about *a man being old at forty or forty-five.*

"Sure," you come back, "you would get all fussed up about this, Old-Timer, because you are about twice forty yourself, and they have been stepping on your toes."

Me! Just leave me out of it, young fellow, and let's get right down to brass tacks.

We will simply consider cold facts and see if the running of this old world of ours; the running of all its wonderful industries, factories, inventions, discoveries, making of laws, making of fortunes, dispensing knowledge, operating our government and every known line of progress—who, may I ask, is responsible for all this? Is it men under forty years old or over?

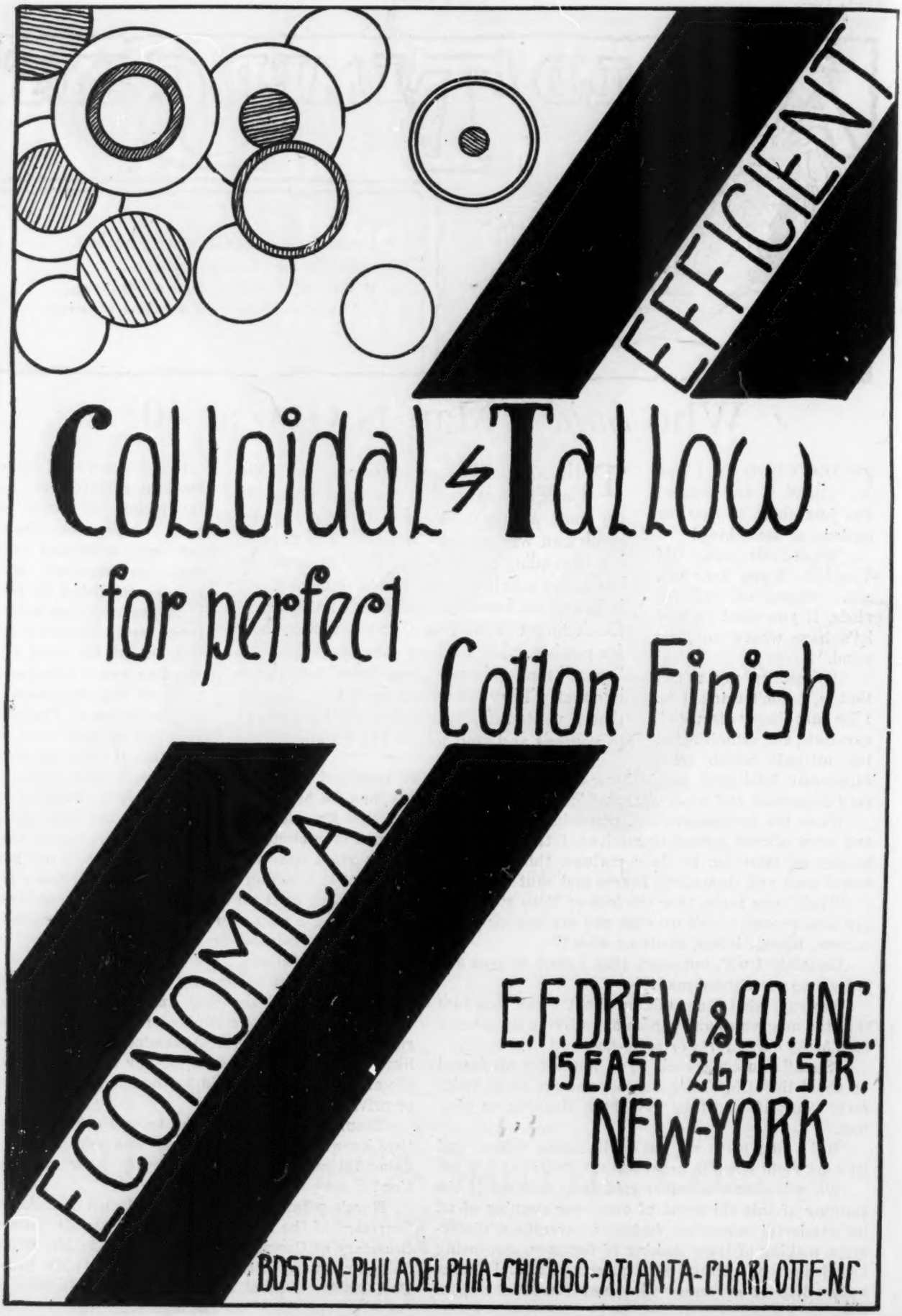
The history of every modern achievement and the history of every ancient achievement bears out my statement that these achievements have been accomplished by men, in an overwhelming majority of instances, over forty, and one of the most outstanding recent demonstrations of this statement is the formation of President Hoover's cabinet.

Since Hoover was elected president of the United States, I have heard not one man, be he Democrat or Republican, question the fact that President Hoover is one of the most practical men ever elected to that high office. Surely then, such a great man would be great enough to use good judgment in selecting men *under* forty if it was a fact that, as many of these writers referred to in the foregoing, claim, a man over forty is ready to be chloroformed or pensioned or drowned, because he had passed his useful age.

Let's see what he actually did do. First, he absolutely disregarded sectional lines. He did not care whether a particular section of the country had representation from a political standpoint or not, and he likewise showed his disgust for any consideration for the argument which would fix the *age limit* for public or private employment.

Then, does it not look like he was using his practical knowledge in selecting men who were capable of doing the *work*, regardless of every other consideration?

Here's what happened: He selected Mr. Adams, Secretary of the Navy, at the age of 62; Mr. Lamont, Secretary of Commerce, at the age of 62; Mr. Wilbur, Secretary of the Interior, at the age of 54; Mr. Brown, Post Master General, at the age of 60; Mr. Stimson, Secretary of State, at the age 62. And then hear these fellows yell about a man being old at forty.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Just how they get that way—darned if I can figure them out.

I was very much impressed with a cartoon I saw in some paper which pictured the stern business man, who himself looked to be about sixty, as pictured by Jno. Cassel, the artist, and beside this wonderful (?) business man was a sign reading as follows:

"Under no conditions will this firm hire anyone over 45 years of age."

Next was a picture of President Hoover, with a sign next to him:

"The average age of the Hoover cabinet is 60."

The first thought which came to me when I saw the cartoon was, that the stern business man himself should be discharged, because he was far beyond 45. The next was, that he was just a plain damphool. At any rate, it was a good cartoon.

Now for some more facts:

The *Literary Digest* of April 13, 1929, carried a long article with this heading: "Ringing the School Bell for the Grown-ups," and following, is the quotation:

"For learning, the most favorable years in one's life are those between 18 and 45. The idea that you must learn before you are 18 is an exploded delusion."

Sure it is, and Old-Timer not only knows that to be a fact, from personal experience, but he can cite numerous cases of where he has taken overseers and second hands who could hardly work long division, and has taught them to not only understand common fractions, decimal fractions, percentage, square root, etc., but has seen them develop into men who could handle all the calculations necessary to successfully run a cotton mill.

Old Timer's readers are of course familiar with his friend Jim. Well, I am herewith divulging for the first time in over eight years, that the character "Jim" is not fiction, but an actual living, human being, and I take great pleasure in saying that I could cite you several more men whom I have had the pleasure of working with and who have passed through practically the same experience as did "Jim."

In all my life, nothing has given me more pleasure than to take a man who had never had the opportunity of school or college, and by patiently and persistently teaching him, see that man develop to where you would think he had textile school training.

"Hot air!" did you say? Well, here's more facts:

I have in mind at this moment several superintendents who are living in South Carolina and Georgia, who I know will be glad to vouch for the accuracy of my statement, and there are three overseers now teaching night school, who a short time ago were second hands and could not figure the draft on a machine or the percentage of waste on a report to save their lives.

I remember distinctly when I had only been working with one of these men a few weeks. I walked up one day while he was reeling off a sizing and I asked him how many inches or yards it was around his reel and he could not tell me. Now, he is teaching cotton mill calculations.

"You can't teach an old dog new tricks."

Well, Old Timer just simply can prove that you are wrong. He has proven many times that you *can* teach an old dog new tricks.

With facts like these it simply gives me a pain to hear all this fuss about a man being old at forty.

No, brother. Education, either practical or theoretical, is a life-long process. Old Timer has, time and time again, tried to point out to the young textile graduate that the diploma is not the end of his education, but the beginning.

Another illustration taken from real life (meaning that the man is still living, and that this statement is a real fact, which can be verified to any "doubting Thomas"):

Old Timer once worked with a man, or, worked for him, and as that man would teach him many of the practical problems of the mill, Old Timer in turn would teach him mill calculations.

This man was an overseer at the time; later, he was promoted to the superintendency.

About the time of my friend's promotion there was a young engineer building a mill in the South, as an employee of a well known firm of architects of New England. The young engineer saw the possibilities of the South and decided to go in business for himself. He put out his shingle, and soon had the contract to put up a mill. (His engineering firm is now one of the best known in the country—and he is a millionaire).

My friend, the overseer who could not figure decimal fractions a few years before, was then asked by this engineer to lay out the machinery and figure the productions, etc., for the machinery in this mill. These are absolute facts, not fiction.

Once more I say, tell *me*, "you can't teach an old dog new tricks." Blah! Go chase yourself.

Listen, all you smart Alecs who have been berating about a man being old at forty.

"Youth is not a time of life, but a state of mind."

Colonel Lindbergh (God bless him!) recently made this remark:

"A pilot, properly trained, is just as good when he is old as when he is young."

And, Old Timer says he is better, because he has the experience, which is the most valuable thing any human being can have. *Experience* cannot be expressed in dollars and cents. No man living has ever been as valuable from an experience standpoint, at 35 years old, as he was at 45 years old.

Wallace Meyer, a noted writer, heads an article with this:

"What, indeed, is an old man?" and quotes as follows:

"Trader Horn has just said goodbye over the radio. A year or two ago he peddled griddles to housewives in South Africa, whereas, he had been a trader in rubber and ivory when that took men daily into hardship and danger.

"A woman who saw the great story of his life caused him to write a book, which brought him from flop house to affluence; to the spotlight; to New York; into millions of American homes. His total of years is 73."

I have often been amused at men who say they must make their fortunes before they are 50.

I think it is written that E. H. Harriman did not start his real work until he reached 40.

And of course, you know that Henry Ford did not get his start until after he was 40.

Lloyd George of England did his great work after he was 50.

Clemenceau, the Tiger of France, is 87.

Marshal Foch was 67 at the time of the Armistice.

John Philip Sousa is 74.

Thomas Edison is 81, and still going strong.

H. S. Firestone is 65, and now developing the most extensive rubber plantations in the world.

William Howard Taft is 71.

Say, brother, do you remember the Old Timer article in COTTON a few years ago about "Never Too Old?"

Well, if you keep your copies of COTTON as you should, you who are overseers and superintendents, go back and read that article. It was written long before the papers were full of this—"A Man Is Old at 40 Stuff."

Old Timer referred to L. S. Starrett in that article. Most all men who have bought tools know that "Starrett" appearing on a wrench stands for quality. Well, L. S. Starrett was broke at 50 years of age and handicapped by being deaf, yet, he later built up that wonderful business by his own hard work, and became a wealthy man.

Now have you had enough facts, or are you still a hard-headed old mule?

Oh yes, I know what some of the advocates of "A man is old at 40" are going to say:

"We are not talking about educated men; we are referring to weavers, fly frame hands and all kinds of operatives in all kinds of business or industries."

All right, old man, here goes. Let's see if Old Timer can't knock that argument into a cocked hat also. But, before I start, I want you to keep this one thought in your mind:

"This is not a day of brawn and muscle, but a day of brains."

I believe it is generally conceded that even Gene Tunney did not become the world's heavy-weight champion because he was stronger than other men or could hit harder than other men, but because he used his brains.

I can well remember how I used to try to show off by picking up one end of a warper beam and walking into the slasher creels with it when it took two men on the other end.

We don't need a smart alec like that today, because we have chain hoists, air hoists and electric hoists with which a 75-pound boy can pick up a beam and slide it into the slasher creel.

I know a weaver who ran six hand-threading looms in 1900, and he is running 44 automatic looms in the same mill today. He is now 29 years older, and certainly not the physical man he was 29 years ago, but he is producing over 700 per cent more cloth today than he was 29 years ago. Has muscle done that? No, but a cooperation of the brains of loom builders, superintendents, overseers and this weaver's brains has made it possible for that man 29 years older to produce over 700 per cent more cloth with less physical energy than he used before.

The man of 45, 50 or 60 hasn't the snap and vigor of a youth, I'll admit, but he has something which is far more valuable in this modern age:

"He has the knowledge born of experience." He uses his brains.

You fellows who were raised on a farm—when you got a bale of cotton picked out—you loaded the wagon the night before—mother killed a chicken and fixed a lunch next morning and you and Dad were off at the break of day to have the bale ginned.

At the gin you picked up the loose cotton by hand and put it into a basket, which was lifted up on the platform, and a man then carried it to the gin—an all-day job.

What happens now. You truck sails out at 25 to 30 miles per hour, on a hard-surfaced road; is at the gin in a few minutes; an air draft picks up the loose cotton and—Zip!—you drive around to the other side and get your bale of cotton. You don't have to be a giant to do that.

Gosh! I'm sleepy, and must sign off, but let me take one more whack at you by leaving this thought with you, which I hope you will not only remember, but that you will profit by.

It matters not what your age is, start in to use *your* brains, instead of trying to put up an argument that a man is old at forty.

"Youth may possess greater physical strength than age, but physical strength is becoming less and less important in all industry." It doesn't take muscle to make a successful man today, but what you need is brains—ideas—therefore:

Get the knowledge born of Experience, and you will succeed, at any age.

The Delusion of "Low Cost."

(*Continued from Page* 1002.)

have in recent years developed a new-found capacity for cooperation among themselves to effect high purpose in public welfare. It is an advance toward the highest conception of self-government. Self-government does not and should not imply the use of political agencies alone. Progress is born of cooperation in the community—not from governmental restraints. The Government should assist and encourage these movements of collective self-help by itself cooperating with them. Business has, by cooperation, made great progress in the advancement of service, in stability, in regularity of employment, and in the correction of its own abuses."

The most decisive and effective step that you have ever taken in this direction was in helping to create the Cotton-Textile Institute. We were already indebted to the Association of Cotton Textile Merchants for helpful and illuminating statistics, and very nobly have they responded to this enlarged movement in the direction of practical cooperation. It is quite remarkable that the institute could have developed in so short a time the efficient and influential organization that now stands as a credit to the entire industry, and is looked upon most favorably throughout the world. The

value and extent of their service reaches far beyond any superficial indication.

Those who are in touch with its counsels, recognize that it is being guided by a master mind. If we had chosen men of average ability, the enormity of the task would have been overwhelming to them and in all probability they would have made but little, if any, real progress. Many times during the brief period of two years since they began to function, the situation has seemed almost hopeless, for no other reason than a lack of cooperation on the part of its members, which is the one vital thing. Some of us seem unwilling to follow even the wisest leadership that we can produce. One of our most prominent and useful members recently said to me, "No man at the head of an organization like the Cotton-Textile Institute could possibly move in the direction of every man's desire." Members should exercise their right to express their opinion and, if necessary, to fight for their position; but once the course of an organization is determined, individuals should fall into line and pull for its success. We should follow and support our leaders. Even if we had no major problems, the institute service would be of great value to the industry; but with such a situation as now confronts us, it is manifestly indispensable.

When you consider that the cost is a mere fraction of its value, either from an advertising or managerial viewpoint, it would seem that every cotton-textile manufacturer would avail of his privilege to join; but when you add to this a realization of the agency that it affords for practical, helpful, group cooperation, one cannot afford not to be a member and take an active part. I do not know how to express more clearly the thought that is in my mind than to quote from the address of President Hines at your last convention:

"My conviction is that the industry needs to develop with increasing emphasis its recognition of the necessity for exchange of information, for common study of conditions of general significance and effect, and for each unit determining its policies in the light of what is needed to promote sound business principles and methods. The industry should not permit itself to be misled by the idea that it can disregard and discourage all such efforts at legitimate cooperation and find a panacea in the survival of the fittest. * * *

"There is a better way to get rid of the unfit in industry than through bankruptcy. In fact, the only permanent way of getting rid of them is by such an improvement in understanding of business methods that the 'unfit' become fitted to carry on their business in a way which will neither bring disaster to themselves nor seriously impair the legitimate interests of the stronger units as well.

"It is not those industries where bankruptcies prevail and the weak are being forced to the wall that are making a sound contribution to American industrial life and general welfare at the present time. It is rather industries where there is a prevailing appreciation of sound business principles, and where each unit realizes that it is not doing business in a watertight compartment, unaffected by the condition of its fellows, but that the reverse is true. It is those industries where each unit realizes that it cannot wisely plan its own policies without a very keen appreciation of conditions which prevail generally in the industry and taking those conditions definitely into account. It is those industries where each unit appreciates that a policy dictated solely by what appears to be immediate self-interest and without regard to its effect upon the condition of others is apt in the long run to be indirectly disastrous to itself as well as to others by contributing to keeping the industry as a whole in a condition where the legitimate rewards of even superior efficiency and effort cannot be secured by anyone. * * *

"As I try to analyze the situation as to how we can develop with increasing success the cooperative efforts to which the institute is committed, it seems to me that the very fundamental which we must continue to develop is the idea of confidence among the units of the industry. What we can do to promote confidence is the most vital thing we can do to promote the success of cooperative effort, in securing more intimate knowledge by each unit of the situation in the industry as a whole, and a willingness on the part of each unit in the industry to decide upon its own action in the light of that situation and those problems.

"Therefore, I regard the group organization in the institute as the very keystone of its work, for it is in those groups, if anywhere, that confidence can be built up."

I am aware that it is difficult to appraise the result of our experience thus far. With all eyes focused upon the new order of things, and with perhaps an impatient expectancy of immediate returns, it is no wonder that we find it hard to view our particular situation with proper perspective; and yet it would be a fatal error to lose our heads and spend our time blaming each other or calling each other bad names for not having outrun the onslaught of these complications. There is comfort in the thought that the problems confronting us are no whit harder than those which were met and overcome by our predecessors, and I believe that the same degree of courage and determination, the same confident faith in the great purpose that we are called upon to serve, will win for us as it did for them—for "God hath not given us the spirit of fear, but of power and of love and of a sound mind."

"It ain't the guns or armament,
Nor army as a whole—
But the everlastin' teamwork
Of every bloomin' soul."

Atwood Establishes a New Branch.

The Atwood Machine Company, Stonington, Connecticut, announce the opening of a new service branch. The object of this new branch, which will be located at 936 Miner's Bank Building, Wilkes-Barre, Pa., is to give the textile mills the most immediate service possible. This branch will be under the management of John R. Breen, who for many years has been an erecting engineer and field advisor of considerable reputation in his line of work.

Precision Gear & Machine Co. Now Occupy New Plant.

Precision Gear & Machine Co., Gastonia, N. C., manufacturers of Stewart compound for roving frames, are now located in their new and larger plant at 625 East Franklin St., Gastonia. They state that they have installed additional new machinery and are now in position to make shipments promptly.

Leaning on the Lever

The old Lifting principle as applied by Modern Management

The most interesting fact about Modern Management is that its logic is as old and as *so* as the hills.

With Archimedes, 2000 years ago, it says, today, "Give me a place to stand, and the right *levers*, and I will move the world."

With vision, based on dependable facts and figures, Modern Management makes for itself the "place to stand." And it *leans on its levers*. With sound Organization, Research, Budget Control, System, Order, it lifts with ease and precision its ever-increasing load of greater and greater accomplishment.

To assist Management in the right selection of these most effective tools of business is the service of Modern Accountancy. It contributes the resources of specialized knowledge and experience to developing the lifting, saving, economic practice of *"leaning on the lever."*

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COTTON YOU USE *versus* COTTON YOU BUY

This cotton

has 41.41% of useful fibre in it, and the total mill waste is only 21.53%.

This cotton

has only 30.32% of useful fibre in it, and the *same* mill processes waste 29.26% of it.

Both cottons are from the same field, but A has been precleaned and properly ginned—by the MURRAY-HANCOCK process.

The MURRAY Company

DALLAS, TEXAS MEMPHIS, TENN. ATLANTA, GA.

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Asks About Tubing—and When is a Yard a Yard?

EDITOR COTTON:

We shall be very glad to see some discussion in your "HOW OTHER MEN MANAGE" department on the following questions:

1. What are the proper harness cam settings to weave 16-ounce tubing on Draper looms with the Dwight spring top harness motion?

2. How can this tubing be brushed and calendered to avoid wrinkling?

3. How can we avoid "crawls" or "creeps" in 30-inch 7-ounce osnaburg after it is baled? We recently saw a bale of this goods opened about three weeks after it was baled and the folds measured only about 35½ inches and we are quite sure that they were full 36-inch folds when baled. This cloth is not subjected to any undue tension in the cloth room, but possibly carries about 9 per cent moisture content, which we believe is above the ordinary.

CONTRIBUTOR NO. 4585.

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Size Formulas for Duck.

EDITOR COTTON:

In a recent issue "CONTRIBUTOR NO. 4578" asked for information with reference to the proper amount of size to be used on 8 to 14-ounce duck. I know of mills on this class of goods which vary widely in their regain requirements, running anywhere from 8 to 25 per cent. This of course depends on the finish desired, as well as on the specifications demanded by the customer.

For just good weaving qualities, I consider a percentage of between 9 and 10 per cent of sizing, and between 7 and 8 per cent of moisture, an ideal condition.

For this class of goods, I prefer Pearl starch unless more than 10 per cent regain is desired. It is not possible to get as much regain with Pearl starch as with thin boiling starch, but Pearl starch produces a more elastic coating on the yarn which works for better weaving conditions. It is also more economical.

A formula to obtain approximately 10 per cent regain would be as follows: 100 pounds of Pearl starch, or 125 pounds of 40 fluidity starch, 125 to 130 gallons of water; and 12 to 25 pounds of sizing compound. The amount of sizing compound used depends upon the concentration and quality of the sizing.

This size is to be mixed and boiled vigorously for at least an hour and kept at a temperature as near to 212 degrees as possible. If the batch of sizing is to be used over a long period of time, the boiling should not be kept up during the whole period, but just enough steam should be used to keep the size near the boiling point, at which temperature it is most efficient for sizing purposes. It must be kept in mind that the boiling of the starch vigorously for a period of time gradually breaks down the starch and causes it to lose its viscosity, so that there will be less and less regain before it is boiled and stirred. I therefore advocate small batches of sizing to be used inside of an hour or two, instead of large batches to be run for a long period.

R. S. (GA.)

EDITOR COTTON:

I noted the inquiry of "CONTRIBUTOR NO. 4578" asking for the experience of different mills with reference to the amount of sizing used on 8 to 14-ounce duck. I may be able to give some information in answer to this question.

The percentages of size used vary with different mills, depending upon the grade of cotton used, the amount of weight which it is desired to add to the warp, and the feel which it is desired to have in the cloth. They also vary with the composition of the sizing compound used, not only the percentage of fat, but the kind of fat and grease used; as well as the kind of gum used with the fat in the manufacture of the sizing compound.

I know of a very good duck mill which uses 125 pounds of 40 fluidity starch and 20 pounds of sizing compound, making 140 gallons of finished size. This adds from 14 to 16 per cent weight to the cloth, and gives a full leathery feel to the cloth.

Another mill with which I have had experience uses 140 pounds of 40 fluidity starch and 18 pounds of sizing compound, cooked to 180 gallons of finished size. This makes the cloth feel a little boardy. Another mill uses 155 pounds of starch and 18 pounds of sizing compound, making 180 gallons of finished size.

I trust these figures will be of interest to this particular correspondent and others who are interested in this subject.

CONTRIBUTOR NO. 4579.

Asks About One-Process Picking.

EDITOR COTTON:

I have noted during recent months that the subject of one-process picking has come up in several of the Southern Textile Association discussion meetings and that it is being discussed quite frequently at various mills. I have never had an opportunity to examine this system personally, and I should be very much interested to see some discussion in your "HOW OTHER MEN MANAGE" department, by those who are familiar with the system, pointing out the advantages to be derived in the use of this system instead of the usual two-process or three-process method. I should like to see a comprehensive discussion on this subject by a number of your readers, going into detail to discuss the relative advantages and disadvantages of this system for cotton mills.

CONTRIBUTOR NO. 4584.

Preventing Fly Waste in Carding.

EDITOR COTTON:

In reply to the request of "B. M. (MASS.)," who has had trouble with waste flying out between the cylinder and side arch on cards, I have found that a condition of this kind might be attributed to an unequal draft of some kind, which is due to improper adjustments of the screen underneath the cylinder. The setting of the screen all the way across the cylinder should be equal. For example, say you set the licker-in end of the screen to a 17-gauge, the bottom to a 52-gauge, and the doffer end to a 3/16-inch. Then, both ends of the screen at each of these points should be set to exactly the same setting in each case. If this is not done, you will find a sort of wedge-shaped opening between the cylinder and the screen, and the result is that an unequal draft will be set up, and the centrifugal force of the cylinder will tend to roll the cotton out at the side of the card which has the larger opening.

A further point in connection with the setting of the screens is that the flanges at each end of the screen should be set an equal distance from the cylinder; in other words, if the screen is moved slightly to one side or the other, one flange will be closer to the cylinder than the other, and the result is an unequal draft, which will cause the above-mentioned trouble.

In regard to "B. M.'s" second question, as to what causes too much fly waste and droppings through the mote knives, this dropping down in little bunches, I will say:

As you know, underneath the licker-in there are two mote bars, then a ribbed section of the licker-in screen and then a solid section of the licker-in screen. The settings between these parts on a card must be accurately proportioned so that there will be no excessive amount of space between the mote knives and the licker-in screen. If such a condition does exist, it is perfectly natural to assume that the licker-in will throw out more white stock than would be the case with a proper setting.

He did not state what kind of cards he has, therefore, I do not know whether the following settings will apply to his cards or not. However, one of the machinery manufacturers recommends for this part of a card the following settings:

Top bar, 22-gauge; bottom bar, 17-gauge; blank part of licker-in screen, 29, and nose or ribbed part, 1/8-inch. Also, with reference to the setting of the mote bars, it has been found best to have these set more in a perpendicular line, so that the teeth of the licker-in, in passing by the top of the bar, should it touch, will strike the bar on the beveled edge rather than having a point-to-point contact between the point of the teeth and the point of the bar, which would be the case if there were too much of an angle in the mote bar setting.

CONTRIBUTOR NO. 4588.

Drawing-In Practices on Fancy Work.

EDITOR COTTON:

In the April number of COTTON, "CONTRIBUTOR NO. 4151" asked several questions with reference to drawing-in on fancy work. He said he was starting his drawing-in girls on the one-girl method, that is, not using a hand-in girl, and makes complicated patterns, most of this work being two-beam work for ginghams, suitings, handkerchief cloth, etc. He wanted to know whether one or two hooks should be used, whether a lease or a comb is used to draw from; also whether the girl begins on the left or right hand side of the harness, and if card clothing is used to hold the ends down.

We are drawing 19 harness on as high as 5,500 ends, double beam goods, and as high as 600 ends per pattern, and sometimes go further than that on pattern making.

We use only one hook, as a double hook is not satisfactory on so many harnesses. We use a lease comb on both beams and begin drawing from the left side. The lease combs should be tightly tied together and a 5/8-inch rod laid back of the back lease will assist very much in picking up the ends with a draw-in hook. We use card clothing to hold our ends down, as we consider this the most effective way.

A great help can be secured in making a drawing-in draft by having the repeats for all strips and beams of over two threads each. A long draw out is very troublesome to draw in and, for instance, there is no use using a yard of design paper when 8 to 12 inches would do. A short design draft can be pasted on a card board and handled with ease, while a long one takes time and trouble.

Any hand that is able to hand in, should very easily learn to draw in, and vice versa. In making a short draw-in draft with repeats, any one who designs can make the draft so as to be very short and easily understood. For instance, if you have 40 ends drawn as one and two, just use one and two plus 19 repeats. If you have 20-harness, use only three squares on the design paper for the length, but go straight up and straight down for the different harness, regardless of the number being used.

A great help to be considered in drawing in is to give each, or all together, a simple instruction lesson, using a piece of complicated goods as an example to

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show how important these things are in order to produce good results.

B. C. (N. C.)

EDITOR COTTON:

I am pleased to give you in this letter our methods of drawing-in fancy warps.

We use two hooks to draw the drop-wire and harness, and a single hook to draw the reed. We clamp a comb on the end of the yarn, close to the slasher tape, and brush the ends into a piece of card clothing about 6 inches above the comb. The drawing-in hook engages with the yarn at a point about 10 inches above the card clothing. We use the one-girl method, and start the draw always from the left-hand side.

Whether or not the foregoing is the best method, I am not prepared to say, but I do know that we are drawing 25-harness dobby work, four banks of drop-wires, and up to four colors and gray in a warp. Our average drawing-in hand takes about 13 hours to draw one of these warps, the number of ends running from about 3,700 to 5,000.

CONTRIBUTOR NO. 4567.

Causes of Shrinkage in Laundering.

EDITOR COTTON:

In reply to "CONTRIBUTOR NO. 4086" in regard to shrinkage in cotton goods after laundering. Is there anything in the manufacturing processes that will cause this shrinkage, and what can be done to minimize this? I, myself, have not had much trouble in that respect, though I have had a long experience in the wash goods trade.

I should advise him to study carefully the quality of the goods and conduct a series of tests on several qualities made from different yarns, and if he is a converter who buys his cloth in loom state and puts this out to finish on commission, he will, if he picks out several good finishers, eventually arrive at the one manufacturer and finisher who can give him satisfaction. If he is a spinner, weaver and finisher, including dyeing, then he has a greater field in which to experiment.

I will try and give him a few points upon which to work, and then he may be able to sort out the most salient point that will give him a clue to his trouble.

Some cottons absorb more moisture than do others, and the dry kind, grown in regions where there is little moisture, will have less shrinkage after washing, when made into garments, than those cottons grown in wet regions, because they need less heat to evaporate the water. Cotton grown in wet regions absorbs a greater percentage of moisture.

Cotton cloth laundered in the works is not dried in the manner as are cottons when laundered at home, though the tendency today is for laundry engineers to make the system of drying as nearly to that of atmospheric conditions as it is possible. The air is constantly moving and does not lack moisture, as formerly. A cotton article drying in the open air is retaining during the process a certain amount of moisture, which depends on the amount (percentage) in the air.

The article that has been bleached and dyed, and we presume has not suffered any bad effects from those processes, should have been shrunk before making into garments.

Cotton goods are always made wider in the loom than when sold over the counter, and it is only by practice, and collection of data regarding cloths that have to be bleached, dyed and finished, that every repeat order can be correctly made. I know some cloths are too narrow in the loom state to finish out to certain widths, and are stretched on the tenter (clips or pins), and when finished, are the correct width. This is bad practice, and should be discouraged, for in washing in the laundry, the goods, to a great extent, will shrink back to their former width.

Cotton goods running through the various processes, bleaching and subsequent processes of finishing, are shrinking, or being stretched until they enter the bale room as a finished article, ready for sale.

In mercerizing, the cotton is under tension, both in width and length; otherwise, it will immediately contract and shrink as soon as it comes in contact with the caustic.

In bleaching, cloths are either run through the open width or in rope form. In the former, there is less likelihood of contracting; in the latter, the cloth is run through the scutchers, either direct to drying cans and tenter or to starching tenter and drying cans combined. Then it is run through the calenders, beetles, schreiners, etc., which all have certain effects on the width and length. To readers familiar with these processes, they will be able to see that this width is not natural. The cotton goods have been woven under tension and the wetting out has shrunk the cloth, in my opinion, as follows:

The cotton fibers are hollow, more flat than round, and with a slight twist in the fiber, and owing to the nature of the cotton, which is practically pure cellulose after bleaching, (about 88 per cent of raw cotton is cellulose and the remainder impurities which are mostly removed during bleaching) has absorbed water much above saturation point, swelling out the fibers, and this has increased the bends over warp and filling, (which varies according to construction) thus contracting the cloth in width more so than in length, because it is woven under more tension in width by means of the reed and temples than in the length or warp which is controlled by weights or other means of "let-off" and which has a certain amount of "give" because the beam is constantly turning at even speed, whereas, the width is varying between the reed and the fell of the cloth, as anyone can see if they will watch a loom when it is in motion. There is that tendency to weave narrow, which is counteracted by means of the temples.

I must mention again that the construction of the cloth plays a great part in this shrinkage. Low class cloths will shrink very much in the varying processes of finishing just as cloth of heavy reed and pick of cloths that are not open between each end or pick, will hardly shrink at all. And I think everyone will agree that there are less complaints of shrinkage from the converters who are making a good class article from cloths of good quality.

If cotton is spun in a humid atmosphere under

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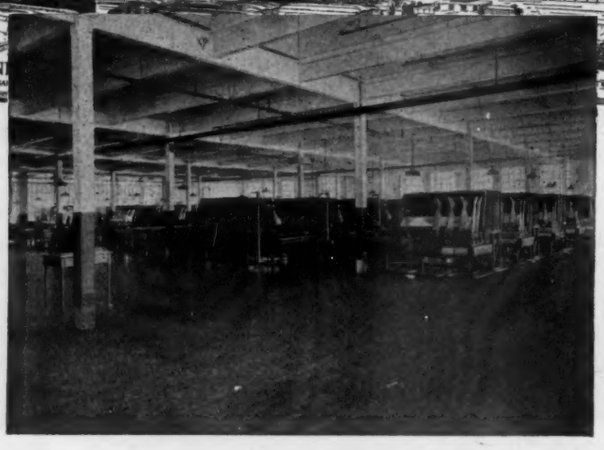

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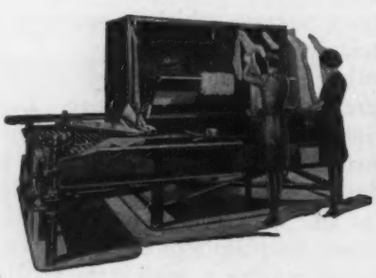

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correct conditions and conditioned before the weaving process, there is less trouble with the widths and lengths during the finishing processes.

Again, there are some mysterious happenings with articles when they arrive at the laundry, and they are very baffling to the chemist and textile expert unless the laundry people are open about their methods of using chemicals. For the benefit of any reader who may not be familiar with cotton throughout the various stages, and to give "CONTRIBUTOR No. 4086'" some lead which may help him to solve his difficulty, I will try to illustrate what is probably one cause of shrinkage in laundering.

Cotton as received at a mill is of a loose fibrous nature, soft and straight, to harsh and curly. (All cotton fibers have a slight natural twist which gives it such splendid spinning qualities.) This condition is altered by the varying degrees of humidity in the atmosphere.

When it is cleaned, carded and combed, it lies in a rope form, without any twist. This is then drafted until it reaches the spindles on the mules and ring frames, where it is given a certain amount of draft and twist varying according to the counts and use the thread is intended for. This twisting takes up length, and with the natural twist of the fibers tends to retain that spinning twist. If it is spun out of correct mixings and staple suitable for that count, it has a certain amount of elasticity. Spinning counts from short staple putting in more twist or turns per inch, means elasticity is non-existent, or nearly so, and any chemical treatment made on the cotton fabric afterwards by finishers, launderers, etc., is bound to have some effect that would not occur on a fabric made from long staple, or I should say staple that is known to be suitable, from past experience.

Then again, any manufacturer who studies his job will always buy the same class of cotton in making cloths which he has manufactured before and which he knows have passed all tests satisfactory to his customer and himself, and especially if he sells under a trade name. It is the haphazard buying and mixing of cotton and yarns in completing an order, that are some of the causes of shrinkage, and sometimes the converter is equally guilty when he buys his cloth from several makers and is using up the remnants, putting different pieces of each manufacturer's cloth into one article. They may have been made from the same class of cotton, but spun and woven under different conditions and tension, apart from the different methods of finishing.

I think it would take an expert textile chemist to say what was the cause of any specific article shrinking in laundering. Everyone concerned would have to be open about their methods or processes, and that is where the difficulties come in; every finisher has his so-called secret finish, and so has the laundry proprietor his own methods. If there were more meetings and plain talks among manufacturers, bleachers, dyers and laundry men, conferences could be arranged and they would all lay their cards on the table; trying to work all together, the results would be of mutual benefit.

When cotton is heated, the fiber becomes slightly plastic and tends to retain any shape into which it is pressed while hot; viz, a crease ironed into it is very persistent. This property is made use of in hot finishing, calendering, schreinering and stretching of piece goods.

When heated above a temperature of 320 degrees F. cotton turns brown and chars, emitting a smell of burned sugar; a property of all vegetable fibers. Long exposure to a temperature of only 212 degrees F., the temperature of boiling water, will cause the brown color and a gradual destruction of the fiber.

Strong solutions of caustic soda (lye) about 10 per cent or higher, have striking effects on cotton fibers. If an individual fiber on a microscopic slide be spotted with 15 per cent solution of caustic soda, it will immediately be seen to untwist, swell slightly and change from the appearance of a twisted ribbon to that of a round rod, yarn or cloth immersed in this solution crinkles up and acquires a harsh feel. On washing, the harshness is removed and the cloth appears more transparent.

If measured, a loss of about 10 per cent in length is noticed, but the strength is increased. Perhaps "CONTRIBUTOR No. 4086" has tested his cloths before leaving the finishers and they have appeared correct, but on opening after delivery, there has been a shrinkage. This may be due to conditions under which they are freighted to the customer, and the place where they are stored. At the finishers, conditions may be ideal. If the cotton from the raw stock to the finished article has been processed in the orthodox methods, I think he will not have any difficulties and I suggest that he study some of the laundry methods for the cause, if it persists after checking up his manufacturing and this turns out correct.

CONTRIBUTOR No. 4078.

A Method of Splitting Cloth.

EDITOR COTTON:

In a recent issue, a contributor asks whether it would be more advantageous, in splitting 36-inch goods 16 inches from one selvage, for special customers' requirements, to do this at the loom or in the cloth room. I notice that most of the replies have suggested that this be done on the loom, with some form of knife, or other cutting arrangement on the breast beam, or elsewhere. However, for work of this kind, I would prefer to cut it in the cloth room.

I would have the stitcher man interwind this style of goods with that of another of the same width, making sure that an even roll is made. I would do the same thing with the shearer man if the cloth were passed through a shearer, and I would also insist upon a good tension on the cloth.

I would do the cutting on the inspecting machine. For this purpose, I would provide the inspector with a discarded safety razor blade, covering one of the cutting edges with a piece of leather, this leather being held in place by two small rivets in the holes in the blade. Since the cloth will be marked, in leaving the loom, by skipping several dents in the weaving, it will be an easy task for the inspector to cut the cloth by holding the razor blade on this mark, and in

stretching the cloth at the same time.

The advantage of cutting this cloth in the cloth room is that both pieces can be handled but once in all operations, namely, stitching, shearing, inspecting, and folding.

The reason I have stated that I would have it interwound is that both pieces would be held together better for folding, and the folder man would be able to get a neat fold and count both pieces at one time.

R. W. (CONN.)

Placing the Light Beam in a Slasher Set.

EDITOR COTTON:

I read every issue of COTTON from cover to cover and I certainly get some good ideas from so doing.

In your May number I noticed a rather interesting discussion from two men with reference to where a light beam should be placed in a slasher set. The discussion was based on a question from a man who said, "If there are five section beams of 400 ends each, and one section beam of 100 ends, in the creel of the slasher, where would the beam of 100 ends be placed in the creel, and why?"

The first man replying indicated that the light beam should be run at the back to permit the use of more friction, as it is more easily applied at this point. However, he said if the light beam should by any chance be wider than the others it would be advisable to run it at the front in order to prevent the rolling of the end.

The other man pointed out that an ordinary section beam of only 100 ends would necessarily have a very uneven surface with grooves and ridges for the entire length of the beam; and he pointed out that if it were placed anywhere other than the back the sheet of yarn from the preceding beams would run in the grooves of the surface of this beam, causing the ends to roll.

Being a practical weaver and slasher room man, I am going to offer my ideas to the readers. At the present time I am operating a job where we are running lots of stripes and having to insert color often in a set that is already made up at the warpers, and we have to run lots of beams with only a few ends in them. Were it possible to make an even beam with a few ends, and if the yarn were the same as the rest of the set, I would say put the beam with the small number of ends in front, so that the yarn from the other beams in passing around it would help to turn the beam and do away with any chance of stretching the yarn too much. However, since we cannot make this beam even, I run ours on the back straight over all the other beams. This gives us the chance to keep the colored ends on top all the way through the slasher, and in front we lease these ends to run on top so that the slasher tender can tell at a glance if the stripes are laid right, and thereby prevent disappearing ends on the loom. Sometimes we have to place 8 to 16-ply cord in a fabric, and of course these have to be run on a beam to themselves, and we handle these in the same way as I have already described.

WEAVER (GA.)

Stopping Heddle Frames Breaking.

EDITOR COTTON:

On page 557 of the March issue of COTTON, in the report of the Spartanburg meeting of the Southern Textile Association, discussing weaving problems, you published some discussion with reference to the causes of the heddle rods in steel heddle frames breaking in the middle. One man pointed out that this trouble was due mainly to the high sley goods and heavy work, when excessive strain is thrown on the center hooks that hold the center bars. He said that the main difficulty in a case of this kind is usually found to be that only one hook is used on a shaft for, say, a 40-inch loom, or wider, when three hooks to distribute the work of supporting the harness, would be much more satisfactory. Heavier pieces of wood are also of assistance, he said.

Several of the other men who took part in this discussion seemed to agree with the opinion which this man expressed.

I read this discussion with a great deal of interest, and wish to say that sometime ago we had a lot of trouble with the frames breaking, but at that time we only had one brace in the center of the frame, and when we added another brace, our trouble ended. I thought you might be interested in publishing this additional experience in this connection.

CONTRIBUTOR NO. 4577.

More on Figuring Weaving Production.

EDITOR COTTON:

I want to add my ideas to the discussion you have been publishing with reference to figuring the average production in a weave room containing looms of different speeds, on different picks per minute. My figures will be based on 48 hours per week, as I am located in Massachusetts, but anyone can change them to apply to any number of hours per week if they desire.

The first thing to do is to find a constant, as follows:

$$\frac{60 \text{ (minutes per hour)} \times 48 \text{ (hours per week)}}{36 \text{ (inches per yard)}} = 80$$

Constant.

With this determined, we next find the constant to be applied for the different loom speeds. In this, we multiply the picks per minute by 80 (constant) and divide by 62 (yards per cut). For example, for 155 picks per minute, we have:

$$\frac{155 \text{ (picks per minute)} \times 80 \text{ (constant)}}{62 \text{ (yards per cut)}} = 200.$$

In this way we arrive at the following constants:

155 picks per minute, 200.
160 picks per minute, 207.
170 picks per minute, 220.
175 picks per minute, 226.

We shall now assume certain styles, as follows:

Style 961, 96 picks per inch, running 50 looms at 155 picks per minute.

Style 768, 120 picks per inch, running 150 looms at 155 picks per minute.

Style 999, 64 picks per inch, running 32 looms at 160 picks per minute.
Style 870, 60 picks per inch, running 72 looms at 170 picks per minute.
Style 1012, 44 picks per inch, running 104 looms at 175 picks per minute.

Now, applying the constants above for the different picks per minute speeds, we find the following figures to represent, in each case, 100 per cent production per week of 48 hours.

Style 961, 2.08 cuts per week.
Style 768, 1.66 cuts per week.
Style 999, 3.23 cuts per week.
Style 870, 3.66 cuts per week.
Style 1012, 5.13 cuts per week.

Then we have the following figures:

	Looms	Total Cuts	Per Cent Production
Style 961	50	86	82.69
Style 768	150	211.75	85.04
Style 999	32	80	77.40
Style 870	72	240	91.07
Style 1012	104	476	89.07
TOTAL	408		425.27

Dividing 425.27 by 5, gives 85.05 average per cent production.

Some mills use the foregoing method, while others use the following, which works out different percentages. Divide the number of cuts produced by the number of looms run times the constant. Thus, in the case of Style 961, we have:

$$\frac{86}{50 \text{ (looms run)} \times 2.08 \text{ (constant for 100\% production)}} = 82.69 \text{ per cent.}$$

Applying this formula to all of the styles, we work out the following percentage for each style as follows:

Style 961, 82.69 per cent.
Style 768, 85.04 per cent.
Style 999, 77.40 per cent.
Style 870, 91.07 per cent.
Style 1012, 89.07 per cent.

Then we multiply the number of looms by the per cent of production in each case, as follows:

50	× 82.69 =	4134.50
150	× 85.04 =	12750.00
32	× 77.40 =	2476.80
72	× 91.07 =	6557.04
104	× 89.07 =	9263.28
TOTAL— 408		35181.62

35181.62 ÷ 408 = 86.22 average per cent production.

C. P. (MASS.)

EDITOR COTTON:

In reply to the question of "CONTRIBUTOR No. 4085," who wishes to know a method to use in figuring the production of a weave room running a various number of looms at different picks per minute. I suggest that he use the following method:

First, figure the per cent production for each loom speed, then multiply each production figure by the number of looms on that speed and add the products up. Divide by the total number of looms in the room, this will give the correct percentage for the whole room.

For example: There are 100 looms running 135 picks per minute and the per cent production on these looms is 90 per cent. There are 150 looms making 150 picks per minute and the per cent production is 92 per cent; and 200 looms running 160 picks per minute at 95 per cent production.

Applying the above rule to the above figures the result is:

100 × 90 =	9,000
150 × 92 =	13,800
200 × 95 =	19,000
450	41,800

41,800 divided by 450 gives 92.88+ per cent which is the true percentage of production for the room.

CONTRIBUTOR No. 4091.

Another Layout for 30s and 43s.

EDITOR COTTON:

"CONTRIBUTOR No. 4157" presents a very interesting problem in the April issue in asking for settings on his layout to make 30s warp and 43s filling. But why omit some very essential points of information which govern one in laying out his mill. One cannot set rolls without knowing what staple of cotton is to be run. And one cannot figure roving frame production without knowing how many spindles to figure on; what kind of beaters there are in the finisher pickers and how many hours a week is the mill to be run. These are small items to be sure, but necessary for giving intelligent replies. Considering the information given, and the general practice today, together with the principles of good cotton yarn manufacturing, the writer will assume that the mill is running 60 hours a week on 1-inch cotton, and submit the layout on that basis. Roller settings can easily be corrected for any other staple by adding or deducting the difference in staple to or from the roller settings given.

Working back from the spinning to picking, my general layout would be something like this:

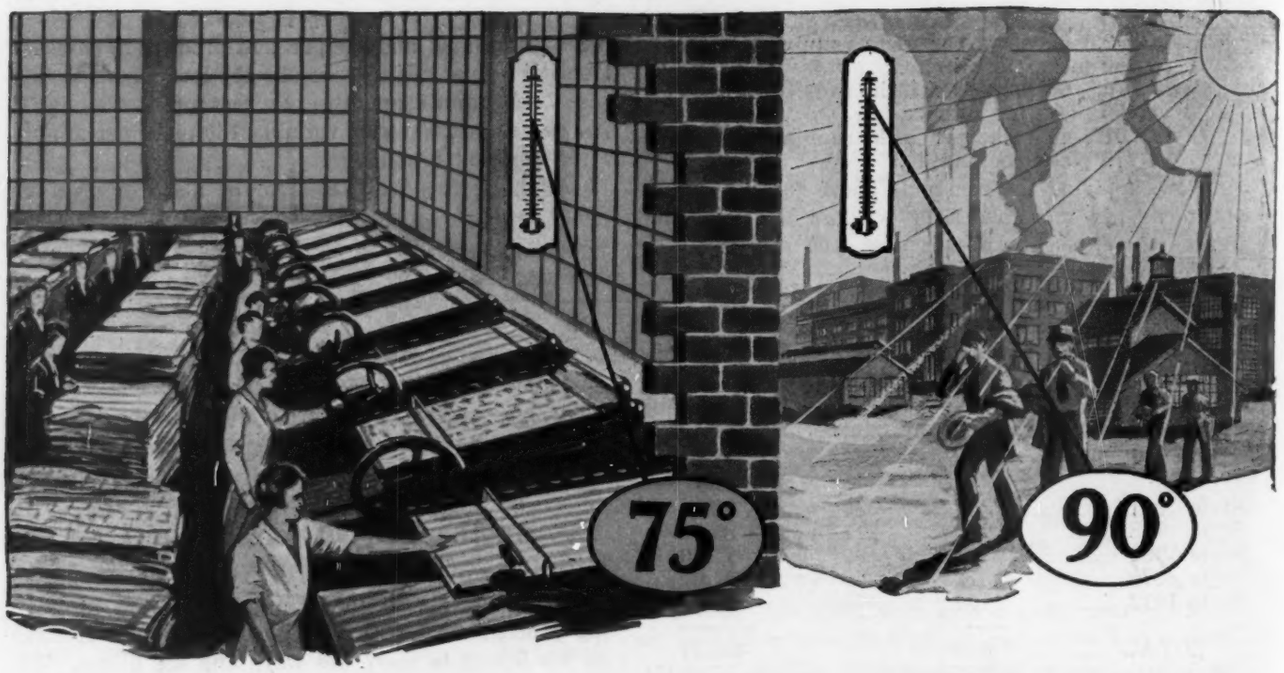
Process	Size	Draft	Approximate Production Required	
Spinning	30s warp	11.43		
Spinning	43s filling	10.75		
Roving	5.25-hank	4.78	9,400	
Roving	8.00-hank	7.27	6,100	15,500
Intermediate	2.20-hank	6.30		15,700
Slubber	.70-hank	4.88		15,900
Fin. Drawing	58 grains	5.60		16,100
Br. Drawing	54 grains	5.55		16,100
Cards	50 grains	102		16,300
Fin. Picker	12½-ounce	4.48		18,000
Br. Picker	14 -ounce			

5.25 hank and 8.00 hank rovings give rather too long drafts in the spinning, but have been chosen from necessity, to get the required production from the roving frames without excessive speeding.

At the intermediate there is the choice of many two different hank rovings—say 1.75 and 2.50—or of compromising as in the foregoing. The writer believes that the advantage of running one size roving outweighs the disadvantage of two, although the two roving system gives better draft adjustment.

Now for the setting details:

The bale breaker, vertical opener and five sections



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of cleaning trunk, should open the cotton very nicely and remove much leaf and dirt.

On the breaker picker the 20-inch porcupine should run about 1,000 r.p.m. and set 5/16-inch from the feed rolls. The two-blade plain beater should run 1,400 r.p.m. and set ¼-inch from the feed rolls. Feed rolls should be 2 inches in diameter for this staple.

On the finisher picker the feed rolls should also be two inches in diameter and set ¼-inch from the beaters. If Kirschner beaters are used they should run about 800 r.p.m.; if two blade plain beaters about 1,400 r.p.m. The writer would set his cards as follows:

Feed plate to licker-in	10/1000
Top mote knives to licker-in	10/1000
Bottom knives to licker-in	9/1000
Licker-in to cylinder	7/1000
Licker-in to screens	17/1000
Back plate to cylinder	17/1000
Flats to cylinder	9/1000
Doffer to cylinder	7/1000
Comb to doffer	12/1000

Waste should run 7 to 8 per cent, which with a draft of 102 and a 12½-ounce lap will give a 50-grain sliver. This will require about 11 r.p.m. on the doffer to get out the necessary pounds.

Breaker and finisher drawing should run not over 250 r.p.m. on front rolls. Assuming that they are equipped with metallic top rolls the rolls should be set: Front to second 1⅜-inch; second to third 1½-inch; third to back 1⅝-inch. If leather covered top rolls are used, deduct ¼-inch from each of the settings mentioned. The draft on the breaker drawing will be 5.55, giving a 54-grain sliver; on the finisher 5.6 giving a 58-grain sliver going to the slubber.

The slubber rolls should be set: Front to middle 1⅛-inch; middle to back 1¼-inch. The hank is .70 and with twist multiplier of 1.10 the turns per inch will be .92. To get the required production the spindles will have to make about 800 r.p.m., giving the front roll about 204 r.p.m.

The intermediate rolls should be set: Front to middle 1⅛-inch; middle to back 1½-inch. The roving is 2.20-hank, twist multiplier 1.15 giving 1.71 turns per inch. The spindle speed should be about 1,070 giving a front roll speed of 150 r.p.m. and a production of around 15,800 pounds in 60 hours.

Assuming 176 spindles per frame on the roving frames, eight frames will be required for 8.00-hank and seven for 5.25-hank roving. With a spindle speed of about 1,150 r.p.m., the front roll speed will be 120 r.p.m. on 5.25-hank and 95 r.p.m. on 8.00-hank. The twist multiplier is 1.20 giving 2.75 and 3.40 turns per inch respectively. Set the rolls: Front to middle 1 1/16-inch; middle to back 1 3/16-inch.

Running 8.00-hank 4-process roving will give much better quality as speeds and drafts can be adjusted more favorably for breaking strength and evenness. His machinery will not, however, permit such a layout.

As a final suggestion to aid in keeping numbers with a minimum of changing and hence more even work, I would offer the following lap scale. Put a hygrometer in the picker room, read it every hour and adjust the lap weights accordingly. The results will be surprising. A 56-yard lap of 12½-ounce should weigh 43¾ pounds. Have the lap weigh this at 56 per cent relative humidity, and if the humidity is higher or lower make the laps weigh more or less in proportion.

Relative Humidity	Lap Weight
20	42
28	42¼
34	42½
40	42¾
44	43
48	43¼
52	43½
56	43¾
60	44
64	44¼
68	44½
72	44¾
76	45
80	45¼

CONTRIBUTOR NO. 4590.

Some Discussion on Carding.

EDITOR COTTON:

Although November, 1928, is well in the past, still, I feel justified in making some comments on an article found on page 15-R in that number, under the title "Carding and Spinning Problems Discussed."

I feel just as Mr. Rimmer expressed himself as feeling in regard to the vertical opener in reference to production.

The vertical opener is an extremely efficient and simple machine, but in cases without number, the tendency is to overload greatly, and the benefits to the cotton are hardly enough under such circumstances to warrant running it through. Almost an unlimited amount of stock can be crammed through the Crighton opener, but only a limited amount can be actually cleaned.

I was with a large tire fabric mill a few years ago, and they ran several Crighton openers, securing excellent results from them, but the production was kept within a reasonable limit, and they had a good man in charge of them. As much care was taken of the cotton at the opening processes as was taken throughout the entire plant.

It is a long time since I have heard or seen anything regarding different size feed-rolls on pickers. I have found that a good many carders have never heard of such a thing as feed rolls of different sizes on the picker.

Quite some time ago, approximately three or four years past, I wrote an article on picking, and pointed out that the 2-inch rolls should be used for short staple, the 2½-inch for medium staple, and the 3-inch rolls for long staples. The size of the feed rollers affects the settings of the beater to the rolls, and has an important bearing on the quality of the lap produced.

It is indeed a pleasure to see a good word for humidity in the picker room, and also to know that there are some of the mills actually practicing it. Long ago, through the columns of COTTON, I advocated humidifiers for the picker room, and preached it to men that I met on occasion. For the most part I received very little sympathy, and plenty of ridicule, so you may be sure that I am well pleased to know that a representa-

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tive of a machine builder recommends the practice.

Cotton run in a picker room equipped with humidifiers makes a more even lap, one which unrolls better at the card and produces a more even sliver. There is also less good fiber lost in processing. The cotton can be cleaned just as well in a humidified picker room as it can in one not so equipped, providing the proper settings and speeds are used. Of course the humidity must not be excessive. Otherwise, the cotton cannot be properly cleaned and opened.

Another point brought out that is of vital interest to most mill men was the advisability of running the humidifiers during the week end. Personally, I favor the practice of running the humidifiers over the week-end. If the atmosphere is allowed to dry out, the laps, roving and sliver will also dry out, and will also fluff up to a great extent. When this stock is run through, a much greater percentage of fly is made than would be the case where the humidifiers were run over the week end. Of course the greatest evil attendant upon shutting off the humidifiers is the excessive variation in numbers.

Regarding beats per inch and the effect on the breaking strength. I believe it is almost universally conceded that excessive beating will very materially reduce the strength of the finished product and also increase the amount of invisible loss. The obvious reason for the foregoing is, that the ends of the fibers are broken under the severe action of the beaters. *What a great benefit it will be to cotton manufacturing if pickers are eventually entirely discarded for a gentler and more positive method of opening!*

Truly a variation of 1½ to 2 grains in card sliver would be Utopian. If it can be kept less than ten grains, consider yourself among the gifted.

In letting laps "run wild" there arises the question in my mind as to whether it isn't just as well to run the laps right through, regardless of the variation in weight, as it is to set them back and subject the cotton to just that much more beating. I believe the weight, or rather the variation caused by running laps wild would be a most negligible factor in the finished yarn. I do not think yarn run from stock in either method of handling laps could be distinguished even in the laboratory.

Heavy carding will naturally reduce the breaking strength of the finished yarn. It will also produce a yarn of inferior appearance, due to the fact that proper parallelization has not been attained.

It is amusing to see reference made to the number of fibers in the cross-section of a lap. Not many present day carders would have time to stop and count them. I think that is carrying theory a little too far. Of course the fundamental principle of more points than fibers is correct, but I feel that if we confine ourselves to ounces fed in at the card and r.p.m. of cylinder, we will get just as far. This article gets more practical again further on when it states that different cottons require different card wire. I don't believe this rule is ever carried out, but it is the ideal condition. It would be pretty expensive and complicated for a mill running a large variety of stock.

I have, on several occasions, stressed the importance of proper tensions to get the maximum breaking strength in the yarn.

One point where tension is probably neglected more than any other, to my mind, is at the drawing frame. Drawing can be run more or less satisfactorily with a very tight tension before making trouble. In this case I mean by "run satisfactorily," that the machine will continue to operate more or less continuously. But a great deal of damage can be caused by a tight tension on the drawing. The tension is correct on drawing when just a very slight sag is noticeable. The tension on speeders should also be very closely watched, especially on the slubbers. I don't feel that I can over emphasize the importance of tension—and on the roving frames twist and tension can either make yarn or break yarn. So they should both be watched.

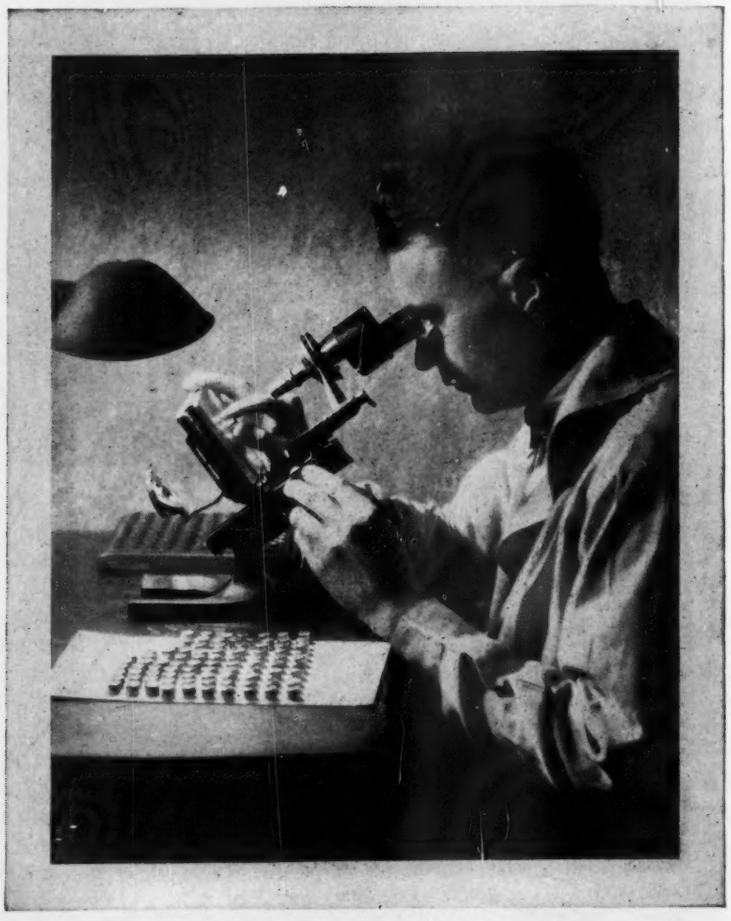
CONTRIBUTOR NO. 4595.

Humidity in the Picker Room.

EDITOR COTTON:

Humidity in the picker room. Who knows? Only those who have the humidifiers and the controllers; then only when they have the recording hygrometer chart to register continuously all during the day and night, then, with that, it only shows what is up at the height of the hygrometer, which is usually eight feet from the floor of the room. The cotton is only about four feet, at most, from the floors on the pickers. Then consider what the cotton has in it when it comes from the opening rooms, running at most any degree of moisture, but say from 6 to 8 per cent. This is the mixture in the number of bales which have to go to the pickers. This, we will assume, will average 6 + 8 = 14, or an average of 7 per cent degrees of moisture. This then, is to work on in the picker room. Where intermediates are not used, the cotton goes from the breakers to the finishers. This ordinarily, only rests on the floor a short time before it is again on the aprons, going on through the finishers. Many times I have had the moisture content tested, which very seldom shows less than 7 per cent, generally slightly above 7 per cent. Taking this into consideration, and listening to mill men who have methods of changing the weight of the laps according to the showing of the wet and dry bulbs of the thermometers, it is hard for me to understand.

Of course I'm not doubting, nor in any sense discouraging any promotion for the betterment of getting the best possible results from any particular research work. But, take the human variation and the mechanical variation, together with the relative variation of moisture contents on the cotton when it is opened at the mixing rooms, and to get at a certain definite adjustment of weights of finisher laps to that of the relative humidity, the showing of this wet and dry bulb seems to be more of a guess. When there is approximately only about 2 per cent to work on, it looks to the writer more like splitting the difference on this 2 per cent and having the laps weighed on this average. I assume that the picker man will protect his room from extreme wets and dry windy days and keep his room on an average. I have tried this in our picker room, and the humidity ran from about 6 to 8 per cent on an average; this without humidifiers.



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To my mind, after due consideration of the angles that enter into arriving at the best possible points and the advantages of regaining the possible lost weights in the other departments, the best way to keep lap weights, is to find the standard weight for the finisher laps, under whatever conditions present, and adopt it. Then too, 6 to 8 per cent is about as damp as it should be to clean it properly. If it is not cleaned here, there is a slim chance hereafter. On the other hand, if it is a little light, this can be regained. So I believe in playing on the light side and being protected on weights by leaning to less moisture in the picker room. True, the argument is, that there is less changing in the numbers, which means evener numbers of yarn. But, taking into consideration that there is only around 2 per cent of this to work on, it does not mean much of a variation in the weight of the numbers, which will never in the kingdom make any discernible difference in the goods (or yarns).

It happens in my case, that the numbers are 30s and 40s, so the reader will see that two-thirds of the weight is in the warp yarns. All that I have to do is to keep enough moisture in the cotton to make it run well in the carding and spinning, for, after it passes the spooling and warping, it goes to the slashers, and there it goes through the sizing process of boiling liquids and is made a new yarn and dressed for future processes. So there are two-thirds of my weights that have been made over to suit this performance. Now, I only have the other one-third of the weights of the cotton to give my attention. By splitting the aforementioned difference, I only have the half of this one-third to contend with to keep my weights for the cloth. If a good average of relative humidity is maintained in the weaving and the cloth room, the cloth weights will run very evenly. This is another department where a hygrometer is needed to record the degrees of relative humidity. I do not mean to *keep*, I mean to check the controllers by, to see that they are acting properly, in order to maintain the proper amount of relative humidity.

Speaking of humidity, to the best of my knowledge and experience, after trying to arrive at some definite conclusion as to what it really means to "cotton milling," if I had to do without all other records (permanently) or recording instruments, I would choose one for the warpers and one for the cloth room. The warper is where one is first governed as to the weights of the mill numbers. Thereafter, one may act accordingly as to what is wanted in the weights of the filling to make the cloth come out the desired weight. See that the humidity keeps a good average at the warpers, then when the weights get off, and the humidity is right it can be discerned if the number is off. That's a good cue to work on the carding weights, or, as we commonly say, giving the carder a raking down about letting his weights get away from him. It's the best check in the world.

Next, after this system has been installed—which means that one can get any amount of humidity that is required at any and all times—is to see that it is kept that way, and, by the way, this is a hard problem, for there are many alibis, for instance, on going through the room it is seen that some of the heads are cut half off, some a quarter and some almost entirely off. You say:

"What's the matter with such-and-such a head? I see it's about cut off."

And the reply is generally,

"Oh, it got to 'wetting-down' and we cut it down. There are some around at certain places that we can't keep going, because when we do it's too wet in other places."

Now this is true, I'll admit, but the controllers are for this purpose. Find the average in the room and be governed accordingly. Once this is allowed, it will soon be evident that hardly any of them are functioning as they should. Neither is the system doing what the humidifier makers intend for them to do. The present day manufacturers of most any invention are hardly likely to promise more than a machine will do, so why should we worry. Put her up to the standard of efficiency that is recommended. We have all to gain and nothing to lose.

It is so nice to have plenty of moisture in the different departments, for it keeps the cotton in working condition; makes the fibers lie down and work smoothly; it is better for the operators to breathe good, clear, cool water sprayed over the rooms, inhaling the pure oxygen from the outside and it is healthful. At different regulated times throughout the week, while cleaning the filter tank, some soluble disinfectant should be put through the system; it answers as a cleanser of the pipes, which protects the fine strainers from getting choked up on the system, and most any corrosion in these pipe lines will affect the automatic diaphragm valves from cutting off properly and cutting off the spray of humidity when the controllers say that it has enough for awhile. On the other hand, it's good for the operator. We use an oil that has a tendency to assist in the prevention of "flu" colds. We do not put it through our system only at the noon hour, and about three times a week.

The humidifier system is one of the best paying systems that can be installed in the mills, *if* they are kept up to what they are capable of doing. It is an easy matter for this part of the plant to be neglected, for, it is generally, "Are the heads working?" We don't stop long enough to see that they are putting out the proper amount of moisture, and that the controllers are acting quickly in going on and off.

CONTRIBUTOR NO. 14.

Rubber Loom Reed.

T. K. Rea, of the Loom Reed and Harness Company, Charlotte, N. C., has received a patent on a loom reed which the ends of the dents mounted in the rubber so that the dents can slide in the frame work and allow them to spring apart when any object is placed between the dents, and will allow the dents to come back together without springing the dents apart and thereby destroying the reed. One of his claims in his patent reads as follows: "a metallic loom reed comprising spaced dents, vulcanized rubber entirely encasing the end portions of said dents and supporting members secured to each other at their ends and being adapted to press against the vulcanized rubber on the opposite sides of the end portions of the dents to hold the ends of the dents in position." This is quite a departure in the structure of loom reeds, as heretofore the reeds have been soldered in the frame work and therefore could not spring apart, while, in this case, the dents can spring apart and then come back to normal position, it is pointed out.

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Unweighted Middle Rolls on Coarse Numbers.

EDITOR COTTON:

Replying to the questions submitted by "CONTRIBUTOR NO. 7541" regarding the weighting of middle top rolls on spinning.

This man states that he is spinning 8s and 9s warp yarn from Low Middling 7/8-inch cotton on a standard spinning frame with 1-inch front rolls and 7/8-inch middle and back rolls. Under this condition the self-weighted middle top rolls would be of very little, if any, benefit, due to the fact that the staple is so short that it is impossible to set the spinning rolls close enough to give what is called a "slip draft." That is, to have the staple slip slightly under the middle top roll while being pulled by the front roll. On a standard spinning frame with roll diameters as given in the foregoing, one should have a full inch to 1 1/16-inch staple to realize any great benefits from an unweighted middle top roll.

We have proven from actual and numerous tests that on the ordinary 7/8-inch cotton, which is most largely used for spinning coarse numbers, that a better yarn can be made by weighting the middle top roll and setting just as close as possible between the front and middle rolls. However, if one should happen to have spinning frames equipped with special 3/4-inch middle steel rolls and sets up just as close as possible to the front roll both bottom and top lines, a splendid yarn can be produced from 7/8-inch cotton, provided the roving is even and uniform and does not contain too much twist. On our ordinary southeastern 7/8-inch cotton, a twist factor of 1.33 times the square root of the number seems to be about right for good roving. We are spinning today in our mill 20s yarn from single roving with a draft of 14 on the spinning frame and making a very good grade of yarn, breaking well over 80 pounds per skein, using small steel rolls on the spinning and an unweighted middle top roll.

It is also noted that this party is using 1.30-hank roving, which is rather unusual for such coarse numbers as it often means too long a draft on intermediates which does more damage than a long draft on the spinning. With 7/8-inch staple the draft on the slubber should not exceed 3½-inch, and the draft on the intermediate should not exceed 5 inches, then if a 1.10-hank roving is produced the best results would probably be obtained in the spinning of 8s and 9s yarn.

The speed mentioned also of 180 r.p.m. is rather high for Low Middling cotton. Undoubtedly, better results would be obtained by reducing this 10 to 20 per cent and probably just as many pounds of yarn spun per week for the end breakage would be so much less at this speed.

CONTRIBUTOR NO. 4587.

EDITOR COTTON:

I note in a recent issue of COTTON where "CONTRIBUTOR NO. 4571" is using the self-weighted middle roll on 8s and 9s warp, made from low middling 7/8-inch cotton, 1.30-hank intermediate roving, filling wind, 2-inch ring, 7½-inch traverse, with a front roll speed of 180 r.p.m. on 8s and 170 r.p.m. on 9s. In answer to this, I have no comment to make with the exception of strongly recommending that he should replace the present arrangement of self-weighted middle rolls with the regular lever-weighted three lines of top rolls. His other conditions as given in his letter in the June issue appear to be in order.

With the high speed of rolls and the bulk of cotton, irregular drawing and excessive slippage of the fibers is bound to occur between the second and first lines of top rolls unless the top middle roll is more heavily weighted.

On coarse numbers of yarn, in all cases, it has been found essential to have the lever-weight system for all three lines of top rolls. The cost of making this change would quickly pay for itself. Less waste would be made. This also applies to his question regarding the life of the leather rolls. No doubt due to excessive end breakages, frequent roller laps are made, and this is the principal cause of a high roller covering bill from frames spinning low numbers of yarn. Very often one roller lap will ruin a new top roll.

He did not give the distance between the top of the spindle or bobbin and the thread-guide on his frames. I would suggest that he experiment with this important point; that is to say, try raising or lowering the thread-board to find out which distance gives the best results.

It is possible that the holes in the roving guide rod may be too small for the hank roving now being used.

CONTRIBUTOR NO. 4575.

Preventing Tangles on the Top Change on Combination Wind.

EDITOR COTTON:

In the April number, "R. P. B. (S. C.)" asked for suggestions to prevent yarn from tangling at the top change on combination wind on spinning.

I would like to say that I am also using the combination wind. My layout is 4¾-inch stroke, 1 11/16-inch taper, 6 7/16-inch actual traverse, with the frames running four hours to the doff on 30s yarn. I cannot see why a frame would tangle any worse on the combination wind than it would on the regular warp wind, if the frames are in good condition mechanically speaking.

However, I would advise "R. P. B." and any others having this trouble, to check up on the frames and make certain that there is no lost motion about the traverse, also see that each part is oiled properly and often enough to keep it well lubricated.

I would also suggest an inspection to make certain that the Pitman rolls are clean and turning and are not flat-sided; as well as inspecting the cams to see that the points are not worn and that they are tight on the shaft or stud so as not to allow any lost motion. The least bit of lost motion will cause the traverse to dwell at the top change, and this is almost certain to result in tangles.

I would also see that there is no lost motion about the gears or upright shaft, going over the frames to see that the lifting rod bushings are clean and are not binding the lifting rod. Also, the separators must be

HIGH WAGES VS. WORLD-WIDE COMPETITION

According to Gilbert D. Harrison, vice-president of the Lewiston Bleachery, who recently returned from a trip abroad.

"The production costs in one of the mills we visited," declared Mr. Harrison, "amount to about one-fourth those of a southern mill making the same type of fabrics. None of the spinners we saw at work in Hungary wore any shoes. They took their shoes off on arrival at the mills and put them on when they returned home. They cannot afford to buy shoes often enough to wear them while working."

"With their low wages and their low production costs, in some cases one-fourth as much as even our southern mills, one is inclined to ask what will we do when they add greater efficiency."

Reprint from May 16th, Daily News Record.

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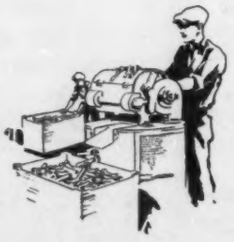
Read the news item above about Mr. Harrison. It tells us what we are on the threshold of, in meeting world-wide competition. Competition which even now effects American prices, and textile mill activity.

As an offset to this competition, the Labor Extension (Multiple Loom System) of removing from the skilled worker the unskilled work, so releasing his time for more skilled work at conservative pay, has done much toward bettering quality and increasing output, at less cost.



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properly set, or this could cause a great deal of trouble at the top change.

After he has checked over the points I have suggested, and still has not solved his problem, I would suggest that he speed his traverse just a little. This will cause the traverse to change quicker and should help a great deal.

C. W. (S. C.)

Spindle Speeds for 30s and 40s.

EDITOR COTTON:

In regard to the question concerning spindle speeds on Draper No. 2 spindles on 30s warp and 38s to 42s filling. The man who asked it says he uses a 1¾-inch No. 2 flange ring on warp and a 1⅜-inch No. 2 flange ring on filling, using 1 to 1 1/16-inch staple cotton.

We run a spindle speed of 9,750 r.p.m. on warp spinning, for a medium gravity McMullen spindle. We use a 1¾-inch ring, No. 1 flange. We are getting a front roll speed of 115 r.p.m. on 32s warp yarn from cotton of 1 to 1 1/16-inch staple, western growth, Middling and above, in grade. We believe we could go to 10,000 r.p.m. on the spindle, except that the bobbin might ride up on the spindle, and also that the spindle might depreciate faster. We have 3½-inch gauge frames with no separators. The wind is combination wind, filling wind with warp cam.

On the filling we are running 8,500 r.p.m. on the spindle speed, with a 1⅜-inch, No. 1 flange ring. The front roll speed is 102.1 r.p.m., about 41s yarn. A faster spindle here might cause the yarn to whip together, as the frames have no separators The filling frames are 3-inch gauge.

We prefer the No. 1 flange ring, as we believe we get better running spinning due to the fact that the flange is smaller in width and more metal can be put into the traveler.

CONTRIBUTOR No. 4140.

EDITOR COTTON:

In a recent issue a contributor desired to have opinions as to the best and most productive spindle speed for a Draper No. 2 spindle, 28s to 30s warp, 1¾-inch No. 2 flange ring; and 38s to 42s filling, 1⅜-inch No. 2 flange ring, using 1 to 1/16-inch staple cotton.

We are running 30s single carded yarn from 1 1/32-inch cotton with a twist of 4.00 on Whitin medium spindles, filling wind without separators, at 9,400 r.p.m. This gives us a front roll speed of 133 r.p.m. The rings are 1⅝-inch No. 2 flange. On the regular warp twist of 4.75. we would cut this speed to about 118 r.p.m.

Our 40s single carded yarns are run on the same frames with a twist of 4.00, making 116 r.p.m. on the front rolls.

We find these speeds give us good running work and good quality yarn.

M. Y. (N. C.)

EDITOR COTTON:

This replies to the question of "CONTRIBUTOR No. 4136," who asked in the February issue for the best

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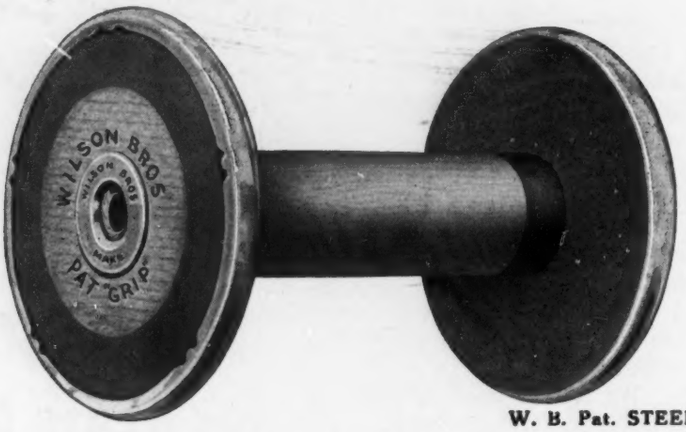

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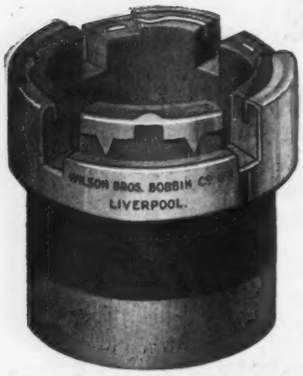

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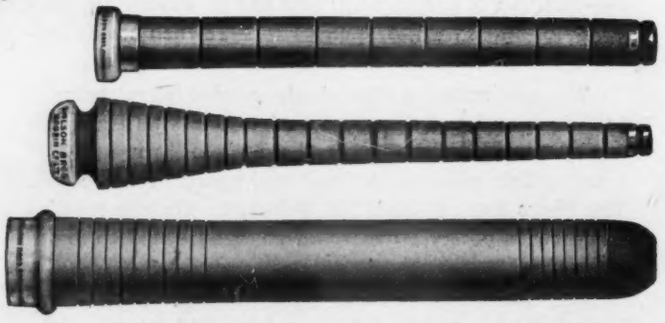

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and most productive spindle speed for 28s to 30s warp, using a 1¾-inch, No. 2 flange ring; and for 38s to 42s filling, using a 1⅜-inch No. 2 flange ring; 1-inch to 1 1/16-inch cotton.

The average spindle speed for 28s to 30s is 9,450 r.p.m. By increasing the speed to 10,450 r.p.m., this would produce about ten per cent more per spindle, giving a slight increase in strength. Our regular 30s warp yarn is spun from 5.30-hank roving, on Fales and Jenks frames, equipped with the following gears: Crown gear, 138 teeth; draft constant, 441.60; twist constant, 783.36; draft gear, 37 teeth; twist gear, 28 teeth; jack gear, 80 teeth; cylinder gear, 30 teeth. We use an 11-inch pulley and a 1½/0 traveler. Our front roll speed is 135 to 138 r.p.m.

On 42s filling, we use the following gearing: Crown gear, 138 teeth; draft constant, 441.60; twist constant, 783.36; draft gear, 53/54 teeth; twist gear, 37 teeth; jack gear, 80 teeth; and cylinder gear, 30 teeth. The spindle speed is 8,400 r.p.m., with a 1⅜-inch ring, 14/0 flat top traveler. The front roll speed is 123 r.p.m. This filling is made from 10-hank roving, 1 3/16-inch cotton. We have never experimented with staples lower than 1⅛-inch.

J. A. H. (N. J.)

EDITOR COTTON:

I am pleased to give below my spindle speed on Draper No. 2 spindle, No. 1 flange ring, 1-inch local cotton, with 1⅜-inch ring, on 40s to 44s filling yarn. My cylinder speed is 1,130 r.p.m., with a ratio of 7.69, giving a spindle speed of 8,690 r.p.m. My front roll speeds are as follows: 40s, 110 r.p.m.; 42s, 106 r.p.m.; and 44s, 102 r.p.m. This is furnished in answer to "CONTRIBUTOR NO. 4136," who asked for this and other information in a recent issue.

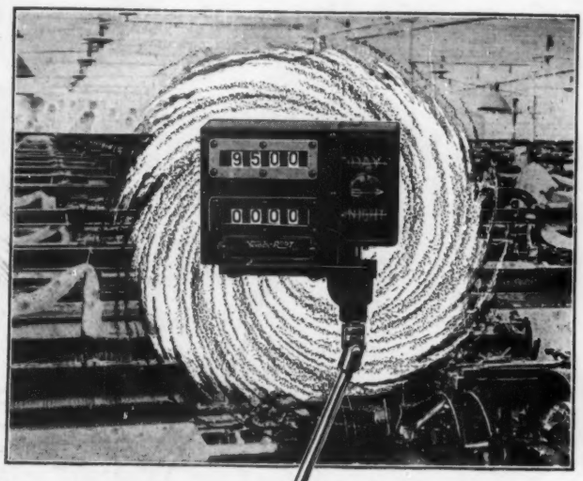
M. S. (S. C.)

EDITOR COTTON:

Replying to the request of "CONTRIBUTOR NO. 4136," in which he asks about the most productive speed for a Draper No. 2 spindle to run, making practically 30s to 40s with 1¾-inch No. 2 flange ring on his warp and 1⅜-inch No. 2 flange ring on his filling where he is using 1 to 1 1/16-inch cotton, we will say that he has left out one important item, which is the length of his bobbins or his traverse.

As you know, the Draper No. 2 spindle was brought out about twenty-five years ago, and the big talking point with it was low power consumption, and, as you know, the blade extends a very short piece below the whirl into the base, and, therefore, if you have a long bobbin it will cause the spindle to vibrate much quicker than if you are running a short one.

It has been some years since the writer ran Draper No. 2 spindles, but when he did he ran them at about 8,700 r.p.m. on his warp and about 7,800 r.p.m. on his filling, using 8-inch bobbins in both cases with other conditions being about the same as "CONTRIBUTOR NO. 4136" has. But even then he found that he had a lot of trouble from vibrating spindles and the only way he was able to stop it was to throw the spindles out and put in a spindle with a longer base. After doing that he was able to increase his warp speed to about



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9,400 r.p.m. and the filling speed to about 8,200 r.p.m., and to get a proportionate increase in front roll speed on both, which increased his production in a like amount.

We do not think that the Draper No. 2 spindle is now recommended by any manufacturer, and we think that the designers of the spindle will admit that the base is too short when you are using a bobbin as long as the writer was using, which was about 8 inches. Now on a short bobbin you may be able to get results with this spindle.

A. B. (S. C.)

EDITOR COTTON:

This replies to your contributor who asked for recommendations as to the correct speed for a Draper No. 2 spindle—that is, the best and most productive speed. He said he spins 28s to 30s carded warp yarn on a 1¾-inch No. 2 flange ring, and 38s to 42s carded filling on a 1⅜-inch No. 2 flange ring. His cotton is 1-inch to 1 1/16-inch staple.

I would recommend a spindle speed of 9,200 r.p.m., for the warp under the conditions he names, with a front roll speed of 108 r.p.m. if using warp wind and 116 r.p.m. if using filling wind.

On the 38s to 42s filling, I would suggest a spindle speed of 8,600 r.p.m., with a front roll speed of 102 r.p.m. However, I believe he would get better results with a 1 5/16-inch No. 1 flange ring than with the 1⅜-inch ring he is now using on these numbers.

R. T. (GA.)

EDITOR COTTON:

I would recommend a spindle speed of 9,000 r.p.m., and a front roll speed of 116 r.p.m., on 30s yarn on a 1¾-inch ring; and on 42s filling, I would suggest a spindle speed of 8,000 r.p.m. and a front roll speed of 98 r.p.m. This is in answer to your correspondent who wanted this information, who is running a Draper No. 2 spindle with a 1¾-inch ring on 30s warp and a 1⅜-inch No. 2 flange ring on 40s filling. This is about what we would do on a Draper No. 7 which is practically the same type of spindle as the Draper No. 2, with the exception of the clutch.

L. J. (S. C.)

The Duties of an Overseer.

EDITOR COTTON:

The writer wishes to express himself on the matter of cost in cotton manufacturing, whether in yarn or weaving mills, having in mind a certain superintendent who tries to lower his cost enough in one department to allow a certain overseer to keep his surplus help because this particular overseer threatened to quit if he had to cut off any of his help. And again, he was allowed to refuse some material and send it back to go as seconds after it has been reworked.

I am trying to bring the point of cost to the attention of the readers of COTTON.

First, every overseer should be a very close observer of the cost of his department, trying to make his work as nearly perfect as possible and keeping a

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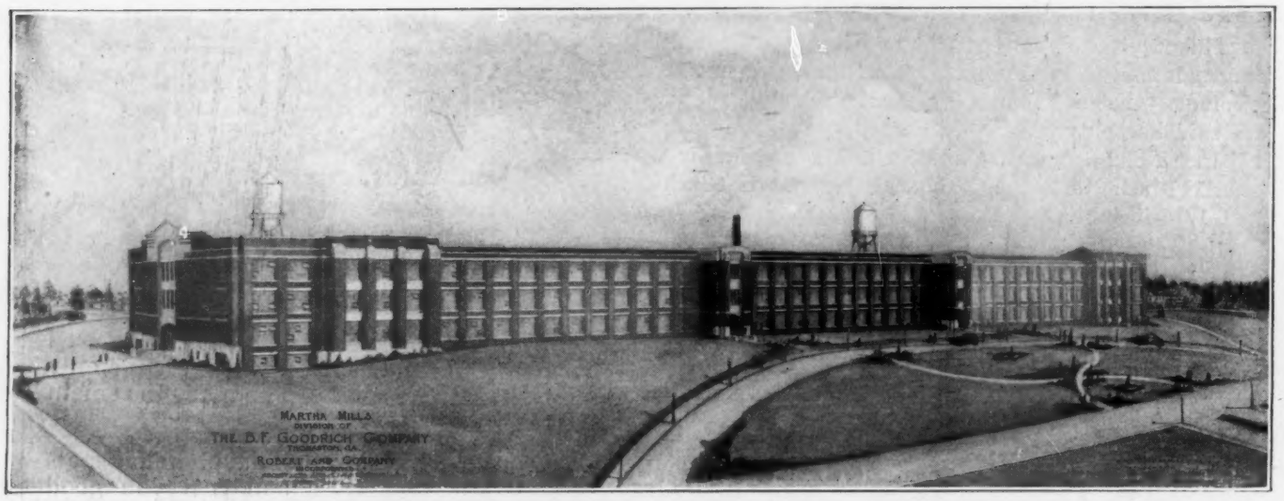
Goodrich decides on AMCO

The Original Martha Mill,

at Thomaston, Georgia, the central unit in the photograph of the completed mill shown below, was equipped with Amco Heads and Amco Humidity Control Stations.



WHEN Goodrich recently enlarged their Martha Mills they specified American Moistening Company equipment for the two extensive additions through Robert & Company, Inc., Engineers of Atlanta, Ga.

The performance and operation of the Amco initial equipment was so satisfactory that Goodrich decided on Amco for their additional humidification equipment. Total capacity of the completed mill is 80,000 spindles, an increase of 50,000.

This newly designed Amco Humidity Control automatically regulates and controls humidity in Textile and other mills without using wet or dry bulb actuated devices.

Are you following the personally-conducted AMCO airplane tours to 43 textile mills in the North, South, and East? If you have not received your copy of these practical, first-hand studies of humidification conditions in the country's leading textile mills write American Moistening Company, Providence, R. I.

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close watch on the matter of waste.

Another very important thing is keeping our supplies to a minimum. Economy is the watch word of the day. The man whom the writer has in mind is not familiar with what is going on in the plant of which he has been the superintendent for several years. Thereby his job has a suspicious leak in it.

Second. The writer calls attention to the matter of how much work one man or woman can take care of properly. He was asked one morning if he would pay a certain hand twenty cents per hour to take care of what two hands had been doing for thirty cents per hour. What happened here? The overseer asked permission to cut his cost ten cents on the hour here and was not allowed to do so. Two hands are still kept on the payroll at fifteen cents per hand each, amounting to $6.00 each week which could be saved for the company. The writer wants to know why an overseer would not be allowed to cut cost in any way that would be honorable to himself and his company.

The company the writer has in mind is not doing a very good business, due to the fact that its competitor cuts cost in any honorable way, and by so doing, can manufacture at a lower cost and sell at a lower price and keep the mill going, making a little money even during the very hard times which exist now.

Third. The writer believes there is still room to help his company, by constantly studying ways and means of lowering cost, by giving the help all that he or she can satisfactorily perform and also getting off more finished production. Both will greatly lower cost. Now the writer knows personally one superintendent who keeps his company's plant humming both day and night. He does it by manufacturing at a lower cost than does his competitors, and he is sold up several months ahead.

If this writer is ever entrusted with the place of superintendent, you can bet his first and last interest will be centered in how to manufacture at a profit. I frankly believe that mills are sunk by low production, poor quality and high cost.

Fourth, and last but not least. Maintain the very highest *quality* and the very highest production obtainable, at rock bottom cost. *Rock bottom*, I said!

CONTRIBUTOR No. 4558.

New Equipment at Clemson College.

The weaving division of Clemson College, Clemson College, S. C., has installed a new Royle power piano machine for cutting jacquard cards. This machine is driven by an individual motor having a variable speed control which enables the speed of the machine to be varied according to the skill of the operator. It is operated by means of a clutch controlled by two pedals, one for starting, the other for stopping. The action can be suspended instantly after any stroke, or it can be permitted to cut without interruption to the end of the card. This machine will facilitate greatly the work of Clemson textile students in working up jacquard patterns.

The weaving division has also obtained a ten-spindle Eastwood winder for spooling silk, rayon, and fine cotton yarns. This machine is also equipped with a variable speed drive which makes it possible to adapt the speed of the machine to the highest speed at which the yarn will run. In connection with this unit, a complete set of unrolling attachments have been received from the Universal Winding Company for use on a No. 90 filling winder.

The ready sale of your product depends much on the quality of your finishing.

Federal Sulphonated Olive Oil will give you better finishing of bleached piece goods. Mills now using this product say it beats anything they have ever seen in a softening oil.

This oil is free flowing and readily soluble, even in cold water. It is the most powerful softener on the market—and when used to replace sulphonated castor oil, only half the quantity is necessary to produce the same results.

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We are glad to send you a trial barrel on approval including the service of our technical experts in demonstrating its proper use. Write for further information.

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FEDERAL PENETRANT—A combined penetrant and softener.
Write for more complete information about these other textile oils and chemicals, also our complete line of heavy and special chemicals, animal and vegetable oils and greases for the textile, tanning and paper industry.

FEDERAL
PHOSPHORUS COMPANY
BIRMINGHAM WORKS—ANNISTON, ALA. DIVISION OF THE SWANN CORPORATION ALABAMA

Joint Meeting At Atlantic City.

(*Continued from Page* 1006.)

chasing raw cotton; disapproved the debenture feature of the current farm relief legislation; encouraged the growth of longer staple cotton, recommending that individual mills furnish better seed and offer prizes for better cotton; and advocating the fixing of a duty upon the importation of jute.

Carl R. Cunningham made his annual report as traffic manager, outlining the activities of the traffic department in detail.

Following the report of the nominations committee, made by A. M. Fairley, and the election of officers, the new president, Arthur M. Dixon, was escorted to the chair. George S. Harris, of Atlanta, Ga., a past president of the organization, made a fitting talk of tribute and appreciation of Mr. Fitzgerald and his services in presenting to him the retiring president's medal.

Joint Session Friday Afternoon.

THE joint session of cotton manufacturers held at Atlantic City on Friday afternoon, May 25th, at the Hotel Traymore, brought together members of the American Cotton Manufacturers Association and the National Association of Cotton Manufacturers, and the discussions by the three speakers centered around "World Changing Conditions." President H. R. Fitzgerald, of the American Association, presided.

The first speaker was Nelson B. Gaskill, former member of the Federal Trade Commission, who discussed "The Fallacy of Price Discrimination."

The second speaker was Warren S. Thompson, director of the Scripps Foundation for Research, who discussed changes in population growth in this country. Mr. Thompson declared that the rapid increase in population is at an end; that in 70 years since 1860 it increased to about four times its number in that year, and that in the next 70 years it is estimated that it will increase fifty per cent. He pointed out that many changes are on the threshold; changes in the rate of growth and in the age and occupational constitution of the population. The smaller increase in population will make customers relatively scarcer. Mr. Thompson pointed out that where a rapidly growing population makes an extraordinary demand for goods, in the future, increase in individual purchasing power must bear the brunt of the industrial expansion. "There is no doubt in my mind that the desire to purchase more goods is present in most of us," he said, "so that we could clear the market of what could be produced if we had the means. But there is some doubt whether we can reasonably expect such a rapid increase in individual purchasing power in the future that we shall not very seriously miss the rapid increase in numbers we have grown accustomed to in times past."

Trends in World Textile Trade.

Dr. Julius Klein, assistant secretary of commerce, was the concluding speaker, discussing trends in world trade. Three major factors he has found are: the industrialization of previously backward countries; a movement toward national and international industrial mergers; and the influence of style and novelty in merchandise. He referred to the tariff, by pointing out that the United States is now taking more European products than before the war. He explained how the mass consumption and mass production of this country are in a large way responsible for the rehabilitation of Europe, although he emphasized that Europe is not yet completely recovered from the effects of the war.

The Joint Banquet.

On Friday evening members of the two associations and guests met in the joint banquet. Lincoln Baylies, president of the National association, was toastmaster; he urging, in a brief address, more attention to a closer regulation of production to sales. S. R. Glassford, president of the Association of Cotton Tetxile Merchants, discussed the changes that are occurring in merchandising cotton goods, and discussed the demands of the modern salesman who is successful. Mr. Fitzgerald also spoke, and was followed by Walker D. Hines, president of The Cotton-Textile Institute, Inc., who spoke in part as follows:

"As I see it, the problems of the cotton mills classify themselves principally under three topics: first, the purchase of raw cotton; second, the physical manufacture of the goods; third, the merchandising of the goods. I am not going to talk this evening about the first two topics and I shall devote myself to the third topic—merchandising of the goods.

"This is just as vital as the purchase of the raw cotton or as the manufacture of the cotton goods, and far less progress has been made in dealing with it.

"Inherently, merchandising is a much more difficult problem than manufacturing the goods because manufacturing policies largely admit of decision and disposition regardless of how other mills handle the same matters. But as to merchandising, what one mill does may determine what another mill feels it has to do. There is much less opportunity for individualistic action and hence it is a more difficult subject to deal with, especially on the part of mill executives who are so highly individualistic.

"As to this, on account of overproduction since the war, the mills have had a new lesson to learn and they have not yet learned it, although varying degrees of progress have been made in different branches of the industry.

"It is a strange thing that a leader in mill management will resort to great study and research and make additional capital expenditures amounting to hundreds of thousands of dollars in order to diminish his cost of manufacture by one-eighth or one-fourth of a cent per yard, and then apparently without serious concern or adequate effort to avoid it will give away all that saving and more through resorting to unsound and at times apparently inexcusable methods of merchandising.

"The Institute has steadily tried to inculcate the lesson of sound merchandising, but more education is required and vastly more practicing of what is learned

is indispensable. One of the outstanding features of this failure to apply sound merchandising methods is the curious psychology which leads the manufacturer when he comes to selling his goods to feel that he is compelled to do whatever his competitor does no matter how unsound and injurious to him and to the bulk of the industry that competitor's action may be.

"There are relatively small classes of manufacturers who are in an exceptional situation as to their necessities or their interests. One such class is illustrated by the mill which is under heavy financial commitments and may therefore be forced, perhaps at the instance of its financial supporters, to make distress sales. There is at the other extreme of the industry the class including the mills which have bought cotton at unusually low prices or which are able to manufacture the goods at exceptionally low costs with the result that they are able, if they wish to do so, to sell for prices so low as, while still representing a profit for them, to represent a loss for the great bulk of the industry. But these classes are small and represent only a minority of the industry. The large majority of the spindles and looms which must be operated in order to supply the yarns and cloths necessary to furnish the public with cotton textiles need higher prices to cover their reasonable costs and are not under any overwhelming financial pressure to sell at such unremunerative prices and do not really desire to do so.

"One of the great lessons which the industry yet needs to put into actual practice in general is that the great majority which is necessary to produce what the public needs, is not bound to follow what a small minority does and does for special reasons which do not apply at all to the great majority.

"I have spoken of the manufacturers adopting these unsound policies. We have to remember, however, that as to the great bulk of the coarse goods sold the selling agents play an important part. In the present state of the development of the industry the selling houses have the great opportunity to guide their mills in the direction of orderly production in line with the demand and in the direction of orderly selling which does not rush prices down to the low and unremunerative levels for the industry in general which are produced from time to time under special conditions. But the theory of employing a selling house, while having important elements of justification, also involves a situation of divided responsibility when it comes to merchandising. The mill can feel that it is compelled to leave the merchandising in the hands of the selling house. The selling house can feel that it is compelled to follow the wishes if not the directions of the mills. In other instances the selling policy is a compromise of mill influence and selling house influence so that each may lay the blame on the other for unremunerative prices.

"This situation of more or less divided responsibility between the mill and the selling house is an additional factor that militates against the correction of the tendency to let the tail wag the dog through the majority following to an unnecessary extent the exceptional prices which are made by the minority. The selling houses have a great opportunity, in this, as in all other matters concerning merchandising, to con-

What Would Washington Say?

AN ALMOST commonplace speculation, yes! In the 153 years of American Independence, celebrated this month, such a question has occurred countless times. But, in fact, just what *would* Washington say?

Suppose he should behold our disks that sing, our radio that whirls the human voice around the earth, our aircraft that have conquered the skies and our talking moving pictures—to say nothing of our automobiles, rushing railway trains, vast industrial plants, towering buildings, giant steamships, our telegraph, telephone and electric lights, and electric refrigeration? *Here is the answer*—He would say, "MARVELOUS"—and in two days he would cease to marvel. It would then be an "old story" to him, *just as it is to all of us, now wondering what science will next bring forth.*

ALSO AN "OLD STORY"

Like the more spectacular discoveries of science the *Sylphon Bellows* is also an "old story." For twenty years its contribution to industrial progress and human comfort while not so dramatic, has been none the less, *basic and essential.* It is the World's most durable, flexible and sensitive expansion member and is employed as the motor element of hundreds of thousands of thermostats in the most highly recognized radiator traps, refrigerating machines, automobiles, industrial and building temperature regulators.

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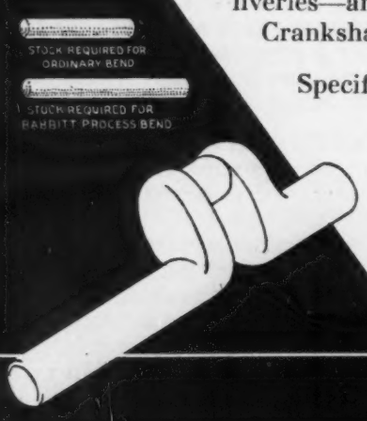

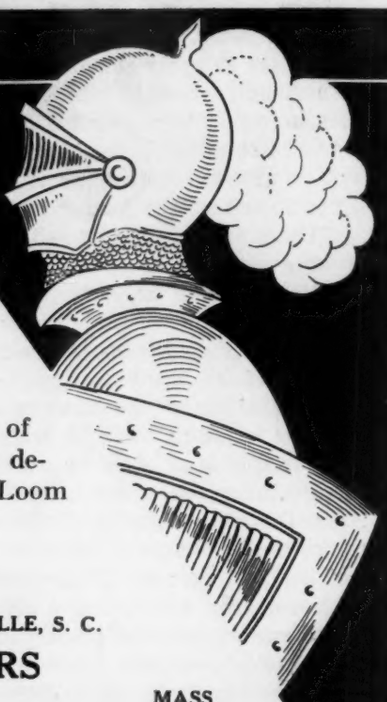

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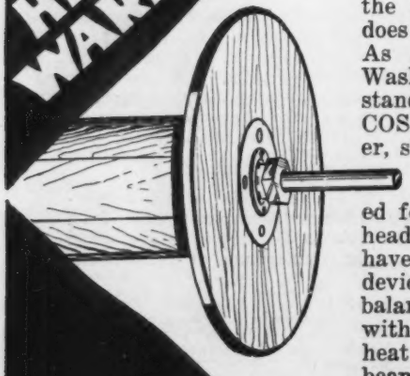

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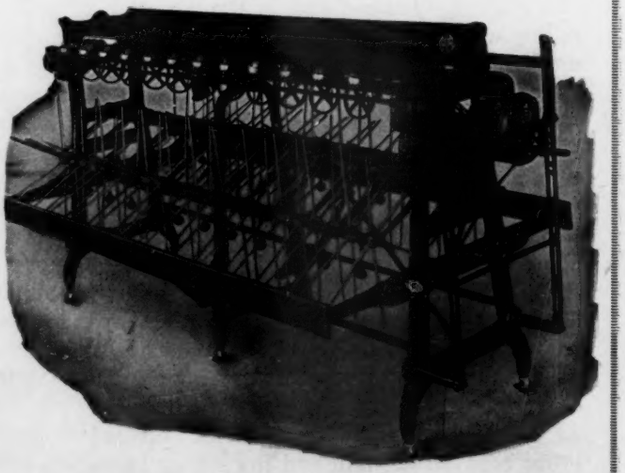

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PATERSON, N. J.

REPRESENTATIVES

South
Gibbons G. Slaughter, Charlotte, N. C.

Great Britain and Europe,
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tribute to the application of sound merchandising principles and I do not believe that either the selling houses or the manufacturers have yet risen to their opportunity in these respects. Just as there are some mill executives who produce to mill capacity in disregard of the demand and force that capacity on a reluctant market so there are some selling agents who seem to feel that their primary business is to force volume of goods on the market by making the following prices that disregard the cost of manufacture.

"This unsound idea that you must let the exceptional mill or the exceptional case dominate the industry and decide its fate runs through and complicates every phase of the problem of improving our merchandising policies. The ultimate responsibility is upon the manufacturer. He selects the selling house. If he lets the selling house sell the goods at prices which are so low as not to return cost to the rank and file of efficient mills simply because some mills under exceptional circumstances choose to sell or are compelled to sell at prices which are wholly unremunerative to the great bulk of the industry, the manufacturer has himself to blame. At the same time the selling house will not discharge its function so as to justify its continued existence unless it adopts and carries out an adjusted sales policy which seeks not only to sell the goods but also to get a compensatory price for them and also keeps the manufacturer advised and strives to guide him along lines of sound merchandising."

Mistah President!

(*Continued from Page* 1004.)

veals no amazingly outstanding and romantic episodes, but underlying it there are certain definite currents of philosophy and ambition which must not be overlooked. He has carried throughout his life's program thus far the axiom and tenet of providing greater service through enlarging present opportunity. In this, however, he has wisely refrained from setting his objective too far ahead. In this he firmly believes, feeling that the setting up immediately of an ideal or objective too far removed from present conditions would tend to depress and discourage. And his own career and progress has been evidence of his adherence to that policy of careful, deliberate progression.

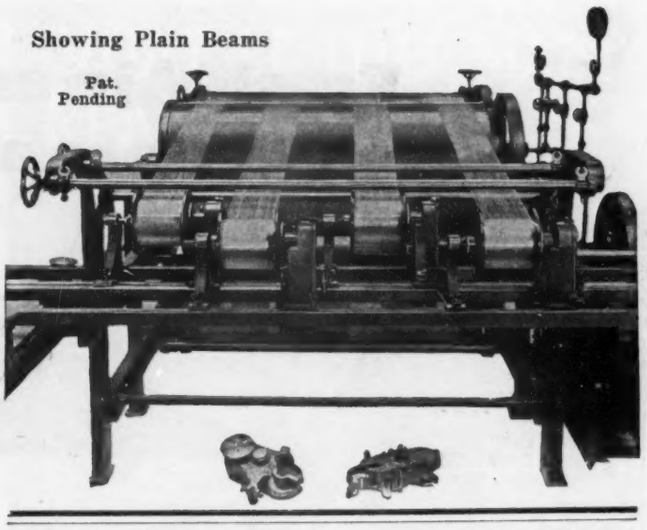
Dixon's life philosophy seems to be embodied in the fact that he never worries about two things: those things which cannot be helped—hence the needlessness of worry—and those things which can be helped. Instead of worrying, he tries to make adjustments to remove them. He believes that most people are square and honest and want to do the right thing, and if a man allows himself to be clouded with suspicion and doubt and weighed down by unnecessary worries, his efficiency is lessened, if not destroyed.

At the present time, though his immediate duties are of an executive and administrative nature, Dixon retains an intense interest in things practical in the mill, and in the people who make up its personnel, and has always in mind their welfare and interest.

Dixon has, outside of his regular activities, only

Showing Plain Beams

Pat. Pending



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WITH this machine warps can be made, sized, and beamed direct from creel in one operation—they can also be sized from beam to beam or from beam to spool. Any number of spools or beams of any type or width can be used depending on the width of the machine.

Each unit is independent and can be adjusted separately for width and tension—regardless of diameter. And can be removed or installed readily.

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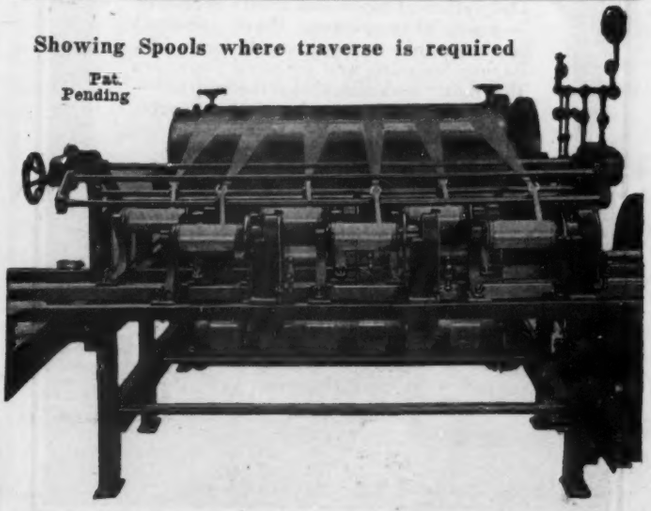

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the one hobby of taking an active interest, from the sidelines, in things political. He has an unusual distinction—that of having taken up golf and then completely giving it up after several years of fruitless effort to improve his game. It is his admitted failure in life. He finds diversion in reading, and is an enthusiastic follower of auction bridge.

The success of any organization depends upon the personality of the leader. It is a safe prediction that the affairs of the American Association this year, under his leadership, will proceed not only along impeccable lines as regards parliamentary law and execution, but to a still broader and bigger program of definite, material accomplishment.

Texas Textile Association.

(*Continued from Page* 1013.)

reported 25.8 beats per inch on his pickers. This concluded the Friday evening session, the discussion being resumed on Saturday morning.

Cleaning practices around cards, drawing and roving frames were first discussed when the association resumed its deliberations on Saturday morning. Mr. Manley, of the Miller mill, reported that, "at McKinney we strip out four times a day and fan out the cards after every stripping. On speeders we fan off between doffs, that is, about every hour. We pick the spindles and clean the roving backs once a week. Drawing rolls are cleaned every month."

Joe Stinnett, overseer of carding, Consolidated Textile Corporation, Bonham, reported that they blow off the cards four times daily and mop off once a day. They pick the spindles on the speeders once a week and clean the backs every two weeks. The sweepers get over the room every hour.

At Waco, said Mr. Clarke, "we blow off cards four times a day after each stripping. We wipe off by hand where the air does not clean. The floor is swept every thirty minutes. Drawing rollers are washed two times a month. Around the roving frames, we sweep up every thirty minutes, pick rollers every day and oil the frames as needed. Every machine is polished by the operative once a week. This of course does not contribute directly to the running of the work, but it has a good psychological effect on the operative. If he keeps his machine clean and sees cleanliness around him, he just naturally makes better work. You can see the effect in the seconds."

Mr. Jones, of Itasca, reported that they blow off the cards twice at night and wipe the comb boxes every hour.

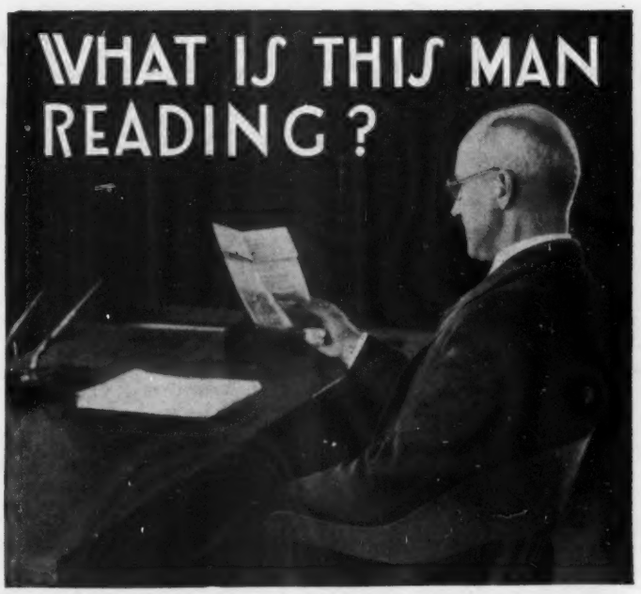
J. A. Bishop, overseer of carding of the Dallas Textile Mills, reported the following complete and detailed schedule for that mill:

Cleaning on Cards:

6:30-8:00. Strip out all cards, clean fly out of card backs. Take strips and wipe off bonnets and fronts of cards. Sweep out card alleys. All except stripping and oiling done by card hands.

10:00-10:30. Strip out all cards. Wipe comb boxes and entire card fronts with strips. Sweep out.

2:00-2:30. Strip out all cards. Clean off entire card with mop and sweep up floor. Polishing: each hand polishes one card per day (total three per day).



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BESSEMER CITY, N. C.

"Cleaning on Drawing:

Clean chokes off top and bottom rollers first thing every morning; this is done by the section man. Clean top and bottom clearers every day at 9 A.M. and 3 P.M. Mop out coilers and steel plate between each doff, before the empty cans are set under the coilers, every 40 minutes. Sweep out from under frames at 3 P.M. every day.

Clean gear heads and entire frame once a week. Wash steel rollers to get over about every three weeks. Polish when necessary.

"Cleaning on Slubbers and Speeders:

Pick clearers four times a day: 7 and 9 A. M. and 1 and 3 P.M.

Pick tops of spindles and flyers after every doff; 50 minutes for slubbers and one hour and 25 minutes for speeders.

At 3 P.M. pick spindles underneath and brush out backs.

Pick rollers by hand every morning.

Roving hauler wipes tops of creels before each creel of new roving is laid up.

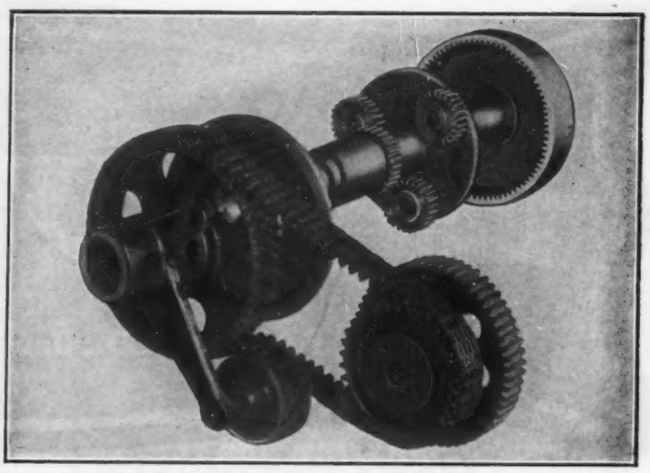
Clean gear heads and compounds, and entire frame, once a week. Polish when necessary.

"How often do you strip cards?" was the next question, and in connection with it, Mr. Clarke asked also for the grade and staple, as well as the number of cards and the number of hands around the cards.

Mr. Haney reported from the Waco Twine Mill, "Three strippings daily on Middling, Strict Low and snaps, 28 cards and 3 men." Mr. Manley, from McKinney, said, "Three times daily on low-grade cotton. We have 94 cards and use six men." Mr. Manning said at Waxahachie they strip out three times daily, on all bollies. They use four men and have 48 cards. Three strippings daily at Mexia, on Strict Good Ordinary, were reported by Mr. Smith. He uses three men on 36 cards. Ingram Lee reported, for the Dallas Textile Mills, three strippings daily on Middling cotton, 15/16-inch, and four strippings on snaps of shy inch staple. He uses five men on 48 cards. Bonham reported three men full time and one man half time on 48 cards. Mr. Clarke of Guthrie reported four men on 39 cards, and Mr. Clarke of Waco said he uses five men on 62 cards.

The next question, suggested by Mr. Mast, was for experiences with straight wire cylinder clothing for cards. Hugh Clarke said he had talked with Don Towers recently, who said he was going to install it on all of his cards at the Anchor Duck Mill. "He told me he had investigated it fully," said Mr. Clarke, "and was of the opinion that it was one of the best things he had ever seen. The cost is about ten per cent above the regular clothing. On Low Middling cotton, Mr. Towers says he strips out only once a week, on Saturday afternoon. On good staple, he says it is necessary to strip out only every four weeks. He says he has no trouble in getting a good web all week, and it does not show ragged toward the end of the week. There is no grinding to do on this clothing. I intend putting three sets on at my mill and giving it a thorough trial." He added that Mr. Towers had told him that he found more long staple cotton in his strips while using this clothing; and that he strips his doffers once daily.

The proper weights for drawing frame rolls on different weights of sliver came up next. Mr. Poole said, "The machine builders undoubtedly know what they are doing when they arrange the weights on drawing. And if anyone is having the trouble that I think



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SEVERAL years ago the Stewart Compound for Roving Frames was placed upon the market. This new unit was developed to meet the need for a compound that would save a greater amount of power, give longer life and lower repair expenses.

To come up to requirements, great engineering skill and unusual accuracy stood out as important factors. Both are evident in the actual product, seen in the following features:

The driving member, the driven sleeve and the control sleeve gear all rotate in the same direction with never more than 75 r.p.m. difference between the speed of any contacting gears, sleeves or bearings . . . . friction reduced to minimum . . . . load on cone reduced 30 to 50 per cent. Actual tests show saving of 10 per cent in power required to drive frame.

The above features plus the fact that all gears, studs and sleeves are three times as strong as necessary prolong the life of the Stewart Compound three to five times that of the bevel gear compound.

So skillfully is the Stewart Compound designed that only very little maintenance is required and practically no repairs.

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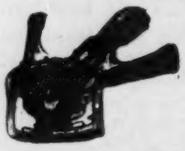

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caused this question to be asked, he will probably find it at the coiler of the cards. On most cards that have been running for some time, the bearings on the small calender rolls become worn, allowing the end to bag down. The card-hand will put it up a few times, and then put a bunch of cotton, or something, between the lug on the bonnet tongue and the bearing on the swing calender roll, causing the sliver to become packed, and sometimes I have seen it crushed to dust. This causes the rolls of the drawing to hop and not draw out the fibers correctly.

"If this is your trouble, put new shaft in both small calenders and see that the lug touches the bearing just before the front lugs touch the coiler plate —the end being up when the test is made. This will give you a soft, yet compact sliver that will run on your drawing without trouble, providing the rolls have the right progressive spread for your weight of sliver."

Several mills' representatives reported the following weights on drawing rolls, from back to front:

Mexia: 24, 18, 18, 16.

Sherman: 18, 16, 16, 14.

Dallas Textile Mills: 18, 16, 16, 14.

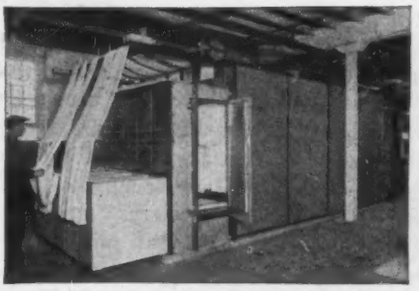
Pioneer Mills: 18, 18, 16, 14.

James Clarke said, "We put on just enough weight to keep the top rolls from jumping as the collars wear." Hugh Clarke asked, "How many of you have checked up on the coiler heads of the cards and the small calenders?" Several mills reported that they do so regularly. "You will have variations in your weights caused by trouble in these small calender rolls if you don't keep checking them," commented Mr. Clarke. "We had this trouble and put in new small shafts and stopped it."

One-process drawing at a low speed versus two processes at a higher speed was the next subject discussed. "I tried this out at Waco," said Mr. Clarke, "and found that one process gave me a better breaking strength, but it caused a bad variation in my weights. I tested it out for six months, but discontinued it after that. Mr. Towers told me that on duck filling he was using one process drawing and slubber roving on his spinning. He made 6s yarn, 9-ply. He said it made slightly uneven yarn, but that due to the twisting, it works all right and eliminates several processes. I found that under the microscope drawing made with one process shows knots that the single process does not take out. I believe it takes more than one process to straighten the fibers out properly."

Herbert A. Burow said, "We were having trouble with our drawing for a while, in running it on the slubbers. I increased the weights on the slubber rolls to 24 pounds and find that this makes more even roving."

How to eliminate slugs in roving was next discussed. Mr. Smith said at Mexia most of the trouble was caused by fanning off frames. Mr. Poole stated that he had stopped his drawing hands from wiping off the heads while the machines were running. At Bonham they have installed top and bottom clearers on the spindles and have their flyers picked every doff. Mr. Clarke of Waco said the best remedy of all was to feed them dynamite every day. He said dirty top clearers was about the biggest source of the trouble.



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Other Continental Branches in ROUEN, GHENT, BALE, MULHOUSE BARCELONA, TORINO, Etc.

"How many cots, and what kind, do you use per spindle per year on slubbers, intermediates and speeders?" was the last question discussed. Mr. Burow reported 1.34 sheepskin cots per spindle per year at Bonham. Mr. Manning reported 2.8 on the slubbers and 3.92 on the speeders. He also uses sheepskin. Mr. Clarke reported for Waco 1.40 on slubbers and .94 on intermediates, and .53 on speeders. Mr. Haney said the twine mill uses 4.15 calf skin on slubbers. Mr. Poole reported 1.68 per spindle per year on slubbers and 1.07 for speeders. He uses calfskin. James Clarke, of Guthrie, said they use 1.74 on slubbers and 1.36 on speeders.

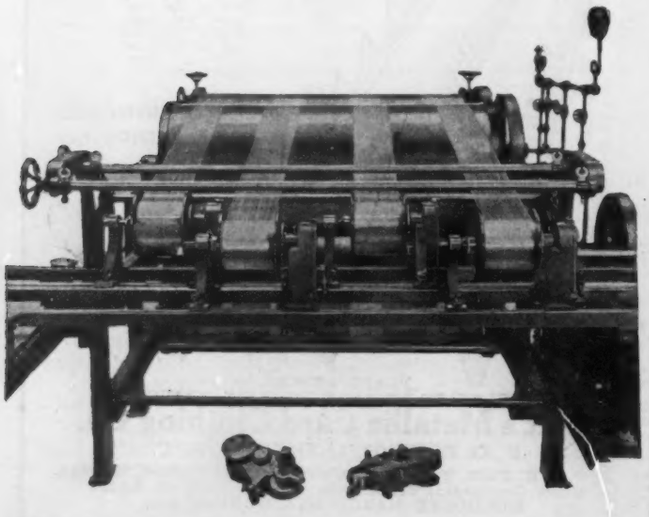
Following the discussion, reports as to end breakage tests on roving frames and spinning frames were submitted. After these reports, the banquet was held, with several short inspirational talks being made. Following the election of officers, the meeting was adjourned.

Machine Sizing for Ribbon Warps.

Charles B. Johnson, Paterson, N. J., manufacturer of the Johnson warp sizing machine, has developed and has placed on the market a machine for sizing rayon and Celanese ribbon warps, which will doubtless be of interest to those manufacturers who have long desired the application of machine sizing as used for broad goods to ribbons and narrow fabrics. Mr. Johnson states that this machine is a decided improvement on his former ribbon warp sizing machine.

The machine, which is shown in the accompanying illustration, is adaptable for any type of bobbin, spool or beam. It is furnished to take either plain beam, or spools for traverse warps. Each head is independently driven through a tension system that can be adjusted to accommodate the different tensions occurring on each beam or spool during the process. The head may be mounted or removed easily, it is stated. The number of heads used depends, of course, upon the width and number of warps being passed through the machine.

Mr. Johnson also states that this equipment is so constructed that it can be applied to any standard Johnson warp sizer now in use; so that broad or narrow fabric warps can be sized on the same machine with equal facility. Furthermore, with this equipment, he points out, sizing can be done direct from creel to bobbin or beam, from beam to beam, or from beam to spool. For direct sizing from a creel, a V type creel is supplied.



Oil-Less Bearings on Skein Winders.

The Sipp Machine Company, Erie R. R. & Warren Street, Paterson, N. J., have recently begun the equipment of their skein winders with spindle brackets which hold inserted oilless bearings. By eliminating the necessity of oiling the end of the spool spindles, the company points out, this improvement overcomes difficulties such as loss of production, annoyance, expense, bad winding, inferior work, etc.

In addition to this feature, the Sipp Company points out that the oilless bearing may be turned part way around, providing new bearing surfaces, doubling the life of the bearings. The oilless bearings are clamped in place and can be renewed readily with a screw driver.

The company further points out that these oilless

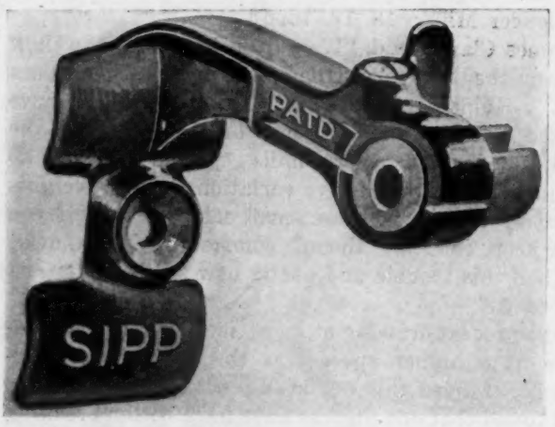


Fig. 1.

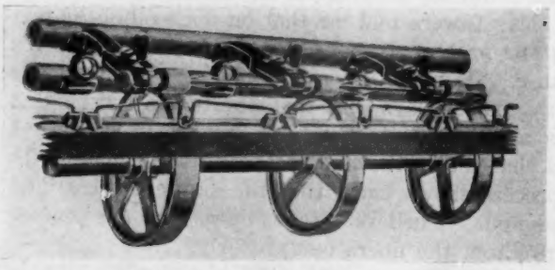


Fig. 2.

bearings eliminate the wear on the ends of the spindle, and on the bearings on which they revolve, which, they state, of course gives better wound spools, particularly at the end, since the spool is held in a definite relation to the porcelain guide. End play in the spindles is eliminated, and faster speed made possible, by accurate machining of the oilless bearings. These bearings are now being furnished regularly on new Sipp winders, and can also be applied to machines now in use. Fig. 1 shows a winder spindle bearing bracket with oilless bearing fitted, and Fig. 2 shows the spindle bearings mounted on the frame.

The VOGUE of BARE LEGS

THE Bare Leg fad is being featured. Yet most women decline to follow it for obvious reasons.

But they are demanding a Bare Leg Stocking! You can supply it with Model K. . . . 320 needle—300 needle.

Prompt deliveries enable you to get into quick production.

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The YOUNG MATRON emphasizes the beauty of RAYON GARMENT finish!

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Problems *in* Manufacturing *FULL FASHIONED HOSIERY*

By C. H. Baxter

Article 7—Examination

IN the manufacturing of full-fashioned hosiery, the successful operation of a mill depends entirely on the examining methods used, and it is only by proper examination of all operations that quality hosiery is made and seconds are reduced.

As I write this article, I reviewed my personal examination of hosiery made in my mill, during the past week, and can say that I came upon mistakes three times during the week that, had they gone on for several days, would have meant a loss of several hundred dollars.

In the first place, making hosiery in the gum, the silk itself is a problem and therefore, one must constantly be examining the hosiery while it is being knitted to prevent bad work being made. We all know that the raw silk will vary and many times the silk used is of hard nature and will result in unevenness of lengths. Sometimes the treatment of soaking has not been done properly and poor fabric, as well as uneven lengths, will be the result. Even a different dyestuff used for tinting will affect the silk, so that one will have poor fabric, unless adjustments are made.

Examining on the Machine

IN examining full-fashioned hosiery, the first and most important thing is to have the hosiery constantly examined as it is made on the machines. This should be done by someone who is familiar with knitting machines and in my mill, I insist upon the knitting foreman doing this examining. In a hosiery mill, the knitting foreman is, or should be, the trained man, who can readily see when a stocking is not right, and as he also understands the adjustments that are necessary to make on a knitting machine, he is the one who should examine the hosiery made by each operator.

The method of examining hosiery made on a knitting machine is important, and unless a thorough examination is made, many things will be overlooked. To thoroughly examine hosiery, the examiner should each day, or several times a day, look over the fabric as it is being made on a machine. First, one should see if the lengths are even, and where uneven lengths are being made, find the cause and adjust it at once. Look over the fabric for sleaziness, and where sleaziness occurs, look for the cause and have it fixed. Look for rough needles and sinkers, and when roughness shows in a stocking, see that it is taken out at once. For taking out roughness in sinkers, a foreman should always carry with him a steel polish eraser and by polishing the sinkers with this eraser, the roughness will quickly disappear.

Selvages should next be looked at to see if they are good, and any bad selvages should be fixed at once.

It does not take an expert on hosiery long to check the work on a knitting machine, and by doing this the first thing every morning, much bad work will be saved.

See a Set a Day.

The examiner should each day take a set of hosiery made on each machine and thoroughly examine it. It is best to have this set numbered by the knitter so if any one section on a machine shows a defect, by looking at the number on the stocking, one will know what section on the machine is making the defect. Numbering stockings will save considerable time, as it means that the section that is causing the trouble can be located at once through the number on the stocking.

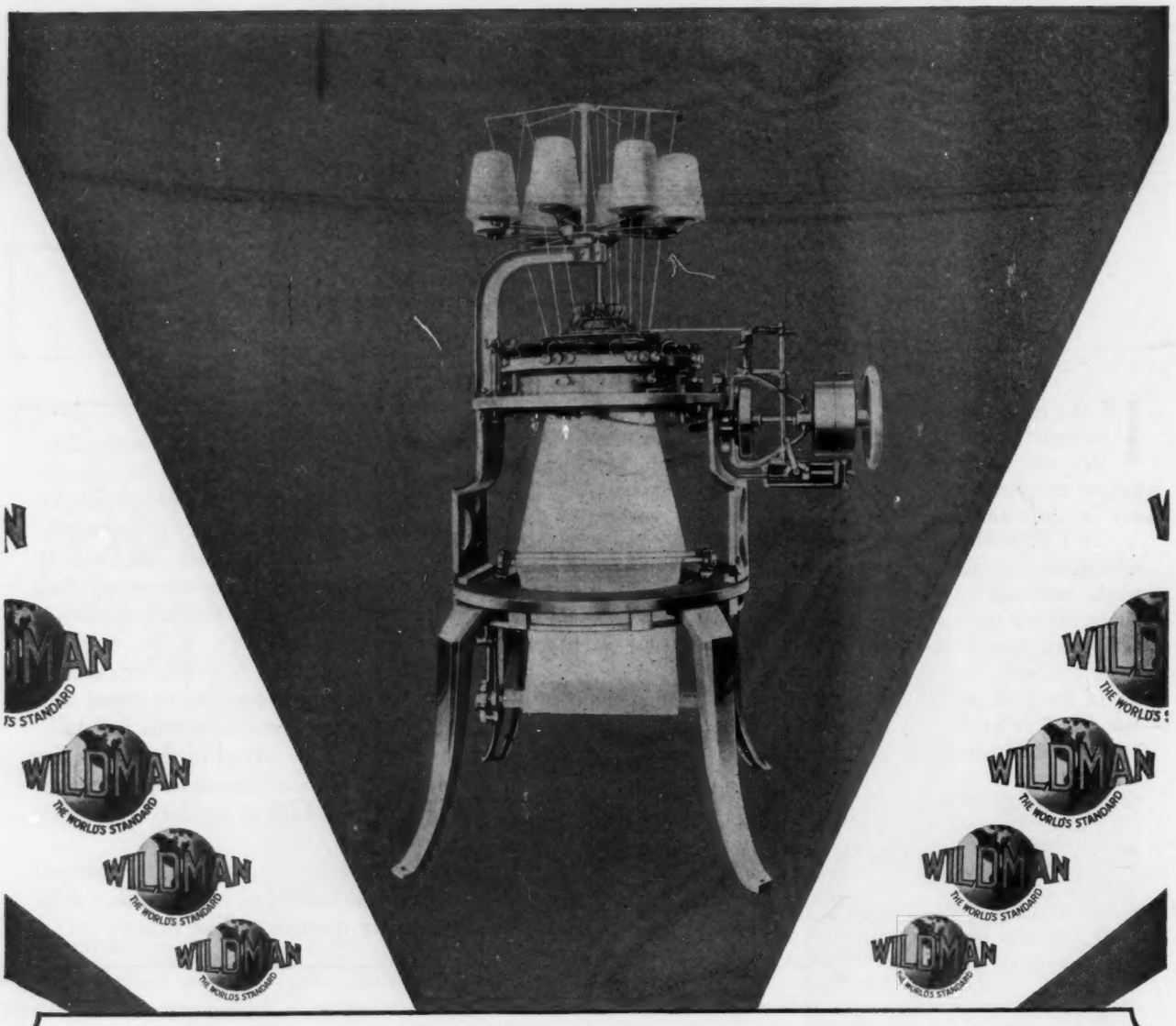
Never use colored chalk for numbering or marking hosiery in the gray, as colored chalk is not removed in the dyeing process. The proper marking material to use is a black stick made from a soap compound, and there are several firms who make marking sticks such as this.

In examining a set of hosiery from each machine,

IN this article Mr. Baxter gives some thoroughly practical suggestions as to examining full-fashioned hosiery. He begins with the actual knitting operations and describes methods of inspection from that point all the way through to the boxing of the goods—including the regular gray goods and finished goods inspections.

This article concludes Mr. Baxter's scheduled series, this having consisted of seven articles dealing with the manufacture of full-fashioned hosiery from the arrival of the silk to the boxed product. Clipped copies of previous articles will be furnished to readers requesting them.

Mr. Baxter is preparing another interesting article on full-fashioned work which will be used in an early number.—The Editor.



The Rayon Industry has put its stamp of approval on the Wildman Body Machine.

WILDMAN MANUFACTURING CO.
Norristown, Pa.

WILDMAN
THE WORLD'S STANDARD

WILDMAN
SPRING NEEDLE BODY MACHINE

the following should be examined: First, examine the lengths to see if they are all even. If there is any variation in length, look at the number on the stocking and then check up the section making lengths either long or short and immediately have this fixed.

Next examine the fabric to see if the stitch is clear. See if any split ends or slubs are in the silk and if the silk is of a good degree of evenness. In examining the fabric, see if there are any stop marks in the fabric that were not made wet by the knitter. By this I mean that wherever a machine is stopped anywhere in the fabric for a period of time, the knitter should wet the needles with a brush before starting the machine again, otherwise a dry line will occur and this shows very plainly when the hosiery is dyed and usually must be classed as a second quality hose.

Watch the Selvages.

After examining the lengths and fabric, examine the selvages and narrowings. In examining the narrowings look for so-called blind stitches. This is very important as blind stitches are the cause of many returns in hosiery and this means a total loss, as when a customer returns a pair of stockings that had a blind stitch in them that caused a runner, the hose is beyond repair. The heels should then be examined to see if the splicing and heel stitch matches and if the heel is the proper length.

"After boarding the hosiery, the final examination begins at the pairing tables. In training operators to do this work, I usually tell them that they are the ones who can either make or break the concern."

The Footing Comes Next

IN examining the footing operation, first see if the stitch in the foot matches the stitch in the leg. This is the most important part of a stocking and many times a large amount of seconds will occur if the stitch in the foot is either too loose or too tight and does not match the stitch in the leg. Then measure the foot and see if the proper length is made for the size called for. Selvages and narrowings should then be examined in the foot and also examined in the toe to see if the toe is either being knitted too loose or too tight.

In examining both legs and feet, be sure to examine the inside selvages in the splicing of the heel and sole to see if the rocker is set properly. When a rocker is not set properly, a loose stitch is made along the inside of these two points and this sometimes spoils the appearance of what is a perfectly fine hose otherwise.

I am sure that anyone can readily see that examining hosiery as it is made on the machine will stop many defects, and it will prevent much waste and bad hosiery from being made.

However, it is impossible for any one person to examine all hosiery made, so to prevent bad work from going through, leg and foot examiners should be employed to look over each operation. The leg and foot examiners should be taught to examine hosiery in exactly the same manner as I have described and look for the same defects.

Seaming and Looping

THE next operation in full-fashioned hosiery where examining operations must be made is in seaming and looping, and this examination is combined with what is called gray goods examining, and the examiners of gray goods should be trained to look for and detect faults and defects in these two operations.

However, one must watch and examine the work made by each looper and seamer, at least several times a day, to see if faulty work is being produced. Several times during the course of any working day, someone in charge of looping and seaming should take several dozen from each operator and examine them very carefully.

In looping, the main thing to examine is to see if the looping is being done properly and that there are no drop stitches in the looping. If drop stitches are found, the fixer should be called to see if the machine is the cause for the dropping of stitches or if it is the operators' fault, in not placing the stitches on the points. The looping should also be examined to see if the knives are cutting properly and that the brush is brushing the cut surface properly. In order to stop menders in looping, it is necessary to make frequent examinations of the looping each day and unless this is done many menders and bad stockings will be the result.

In seaming, the same close examining should be done to see if the seamer is matching the welt, narrowings, and splicing properly and that no drop stitches or skips are in the seam. If drop stitches occur, the fixer's attention should be called to this at once, as this is usually caused by machine trouble. Another important thing to examine is the thickness of the seam, or in other words, see if too much selvage is taken in at the seam. This must be watched, especially in chiffon hosiery, as a heavy seam will spoil the entire appearance of the stocking. Of course, matching is important and a seamers' work should be examined frequently because of this.

Gray Goods Examining

AFTER the seaming and looping operation, the next examining is what is called gray goods examining. Some manufacturers have the operators on gray goods examining also do the clipping, but I find that I can get much better results by having the clipping of ends done by different operators.

I am a firm believer that no person can do two things at once and do both of them right, and as gray goods examining is the most important examination of all, except the final examination of dyed hosiery, I find that if these operators clip ends also, that the examination suffers. By having the clipping of ends done in a separate operation, I get better results in the clipping, and also better results in the gray goods examination.

Hundreds of Distinctive Hosiery Patterns!

All "Banner" machine products of fancy designs and patterns are completely free from objectionable float threads. We call attention to this because it is important to manufacturers of all fancy hosiery. Especially in children's fancy hose.

MADE IN ALL SIZES

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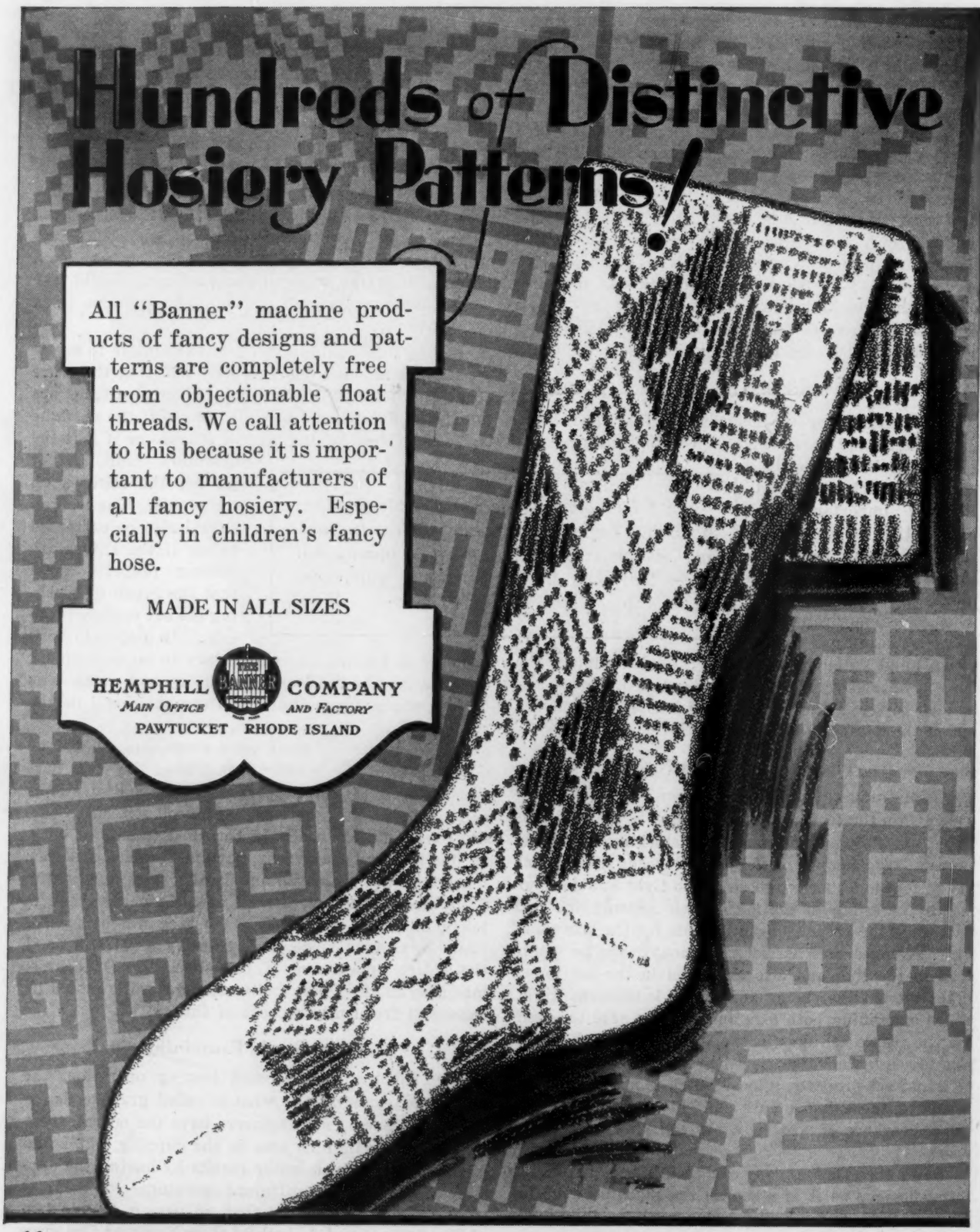
PAWTUCKET RHODE ISLAND



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Southern Offices
James Bldg., Chattanooga, Tenn.
Commercial Bank Bldg., High Point, N. C.

"THE examiner should each day take a set of hosiery made on each machine and thoroughly examine it. It is best to have this set numbered by the knitter so if any one section on a machine shows a defect, one will know what section on the machine is making the defect. Numbering stockings will save considerable time as it means that the section that is causing the trouble can be located at once through the number on the stocking."

Nothing is more unsightly looking than having a fine silk stocking with loose ends hanging all over it, and by training operators to clip ends only, they learn how to do this work properly.

In gray goods examining, the main object of this examination is to detect menders so that no menders are in the hosiery after they are dyed and finished. Many methods are used, but the principal method used is doing this examining on a form, which usually is coated with black enamel. I might say, however, that I use a device for gray goods examining which spreads the leg and toe narrowing, showing up many so-called blind stitches that otherwise would pass through the work unseen. When operators are skilled in the use of this machine, the flaws in hosiery are readily seen, and I know from experience that the percentage of menders at the pairers' tables have been reduced to almost nothing.

In addition to checking out menders in gray goods examining, the operator should also be taught to look for bad looping and seaming and also for flaws or defects in knitting. The operator should be instructed to inform the person in charge when any of these defects are found so that they can be rectified at once.

The examining of gray goods is after all a very important examination in a hosiery mill, and this is one place where training and experience is necessary, so as to secure the best results possible.

Dyeing and Boarding.

The next operation is dyeing, and here of course, the dyer is the one to see that good results are obtained. The principal thing in dyeing is evenness of the dye, good matching to sample, and good matching of cotton and silk, where the style number is made with a cotton welt, heel, sole and toe.

After dyeing, the boarding operation follows. In boarding, one must watch that the hosiery is put on the forms evenly and that no finger marks are on the hosiery. The main problem in boarding, however, is heat regulation, and this is something that must be studied out in each hosiery plant. Too much heat will dry out the hosiery too quickly and give them a cracked appearance. It is advisable to have the heat so that the hosiery will not dry out too quickly, but at the same time, if there is not enough heat, then there is danger of the hosiery being pulled off from the forms while still damp, and therefore, will not hold their shape. Never should the heat be over 225 degrees, as a greater heat is liable to burn or injure the silk. I find that satisfactory results can be obtained on any type of boarding or boarding machine at a heat temperature of 140 to 160 degrees for chiffons and from 180 to 200 degrees for heavier numbers.

The Final Examination

AFTER boarding the hosiery, the final examination begins at the pairing tables. In training operators to do this work, I usually tell them that they are the ones who can either make or break the concern.

In training operators for so-called final examining and pairing, one should see that the training is such that they are able at almost a glance to tell whether a stocking is first quality or a second. The standard of perfection or what might be called first quality hosiery is something that must be determined by each individual mill, so it is practically impossible to explain what should be considered as first quality hosiery. There are several things, however, that all mills consider as second quality hosiery and that is hosiery containing menders, slubs or split ends in the silk. Never should these defects be considered as first quality hoiery. The difference of opinion as to what should be considered as first and second quality hosiery lies mainly in the unevenness of silk, and here is where most hosiery manufacturers must set their own standards of what should be considered as first and second quality hosiery. In the final examination of hosiery, I can, therefore, only suggest that the serious type of operator be employed and be sure that the operator is trained thoroughly in this work, so that one can be positive that the hosiery considered as first quality by them are satisfactory to the customer, who will eventually buy them.

Boxing of Hosiery.

In the boxing of hosiery, the operator's duties are to see that they are folded properly and always boxed with the proper number of pairs and the proper size. Here again one should examine and check boxes continually to be sure that the operators are doing their work all right, because nothing is more disagreeable than having complaints about wrong sizes in boxes and pairs short in the box.

As a final suggestion, I can only say that the examination of hosiery at each operation is very important indeed, and if one must cut cost or save, do not do it in the examining departments, but find other ways, if possible. It is only by a thorough check on all operations that good quality hosiery can be made, and after all is said and done, the consuming public is our boss and they are only going to be satisfied when the hosiery they have purchased is free from flaws and defects. So catch the flaws and defects before they reach the consuming public, and this can only be done by proper methods of examination.

This ends my series of articles on full-fashioned hosiery manufacturing, and in the entire series, I have tried to outline as plainly and as briefly as possible the problems connected with the full-fashioned hosiery industry.

(This article comprises the seventh and last of the current series on full-fashioned manufacture by Mr. Baxter. Another article by this author will appear soon.)

Style Must Go All the Way Up!

IN men's half hose, style no longer stops where the top begins—it goes all the way up . . . . Fidelity's Multi-Design Machine has brought about a new era in the styling of half hose tops . . . . Investigate.

FIDELITY MACHINE COMPANY

3908-18 Frankford Avenue, Philadelphia, Pa.

FIDELITY

THIS is the second exchange of letters between Old Knitter and his son. The boy formerly worked for his father, and has taken charge of another mill and is writing back for advice.

This time they discuss wage scales and the next letter will cover some technical points.

Let us know if you have something you would like to have Old Knitter discuss.—The Editor.

DEAR FATHER:

Since your last letter, I have accomplished a great deal toward getting things in shape here. I followed your suggestion and moved my boarding place, and I am delighted with the change. I am staying with an old couple who have two sons and a daughter who are married, and who moved away, and the old folks keep another young man and myself for company.

The old man seems to like me. He says I favor his younger son Jack, and he calls me Jack. We have had some very interesting conversations and I have begun to feel very much at home. He is very religious and an ardent prohibitionist. He always asks the blessing at each meal, and has no regularly prepared prayer. I recall his blessing this morning, "Father, we are thy children about to begin the march of another day. May thy will be to us a traffic signal to direct the way. Amen!"

Everything is shaping up fine at the mill. There is one thing, however, that is giving me some worry, and that is the wage scale which prevails here. I think we should raise the piece work rates above the other mills so as to attract the more efficient help. What do you think of this idea?

YOUR AFFECTIONATE SON.

DEAR SON:

Your letter of recent date is very gratifying indeed. I am so happy that things are shaping up more satisfactorily and that you are so much better satisfied than you were when last you wrote me. I felt all the time that this would be the case. I am glad that you have changed your residence, and were fortunate enough to get into such good hands. I know the old man will exert a fine influence over you, as I already see some indications of it.

I note with interest what you say with reference to your wage scale. I am glad that this question interests you, for the correct solution to this question will determine largely your success. In solving this, you will become efficient and those under you will likewise become efficient.

Efficiency is the solution to the problem and it will take years of constructive thinking and common sense application to develop an efficient organization

In the first place, you must have an open mind. However, an open mind, like an open window, must be protected with a screen to keep out the flies, bugs, moths, and other insects. The mind must have a screen of discernment to protect it from impractical ideas. An open mind will enable you to learn from all the workers in your mill. The boy that turns stockings has some notion peculiar to himself. A certain topper has some special way she holds her fabric, so that it moves along the points with more uniform accuracy. One looper turns the corner with less effort than another. A seamer runs her work through the guide with fewer adjustments and less attention than another. A certain knitter has fewer seconds and less waste than all the rest.

All the way through the whole process, these conditions exist, and it will be your duty to discover these points of individual cleverness and combine them into a system of instruction which may raise the standard of efficiency of the whole organization. This is a duty and responsibility incumbent upon you which will make you shudder when you realize it, but this very thing is what takes you from the commonplace and monotony of the every day grind and gives you the snap and enthusiasm which inspires others to higher ideals. This accomplishment will mean efficiency and will solve all your wage problems and dividend problems as well.

A whole volume might be written on this subject, but time prevents any further discussion at this time, but I trust I have given you a thought which you will consider very seriously.

All the folks at home send love to you, and we are counting on you to make a success of that job over there. Come to see us whenever you can get away without interfering with your duties.

As ever,

YOUR DAD.

Trouble with Bent Needles.

EDITOR COTTON:

We are running 3½-inch, 260-needle Scott and Williams machines, and have trouble at times with a tuck needle getting the latch bent. It gets bent short just back of the spoon. When a machine starts doing that it will bend the same needle every time, but not both of them. Sometimes a machine will start bending the front one and sometimes the back one. The needle is almost always bent while making a tuck or between the tuck and the beginning of the high splice.

We have looked at everything and done everything we could, but do not seem to find the cause of the trouble. Any information the readers of "KNITTING KINKS" will give us will be greatly appreciated.

CONTRIBUTOR NO. 4586.

Plaiting Two-Thread Silk Over 150-Denier.

EDITOR COTTON:

I would like to know whether it is practical to plait a two-thread Japan silk over a 150 denier rayon yarn on a Model K 260-needle Scott and Williams machine. In the sole of this stocking we are using a 70s/1 mercerized, which is plaited over with the silk and rayon.

Our problem seems to be, not so much on plaiting the two-thread silk on the 150 denier, as it is to get these two yarns to plait over the 70s/1 mercerized in the sole. Our machines are of the five-finger kind, the second finger from the right being the finger we use for the leg yarn, the 150 denier in back hole of finger and two-thread silk in front. We have these fingers as long as possible so as to get a good separation of the two yarns for plaiting purposes. We understand that in order to plait these two yarns the tension of the two-thread silk must be more than on the 150 denier, and the fact being that two-thread silk will not take much tension, due to the fingers of the yarn causing more or less plaiting trouble.

The 150 denier yarn being in the back hole of the finger brings this thread, as it is being fed to the needles, in the left corner of the throat plate. Naturally, the splicing finger, which is the 70s/1 thread we use in the sole, is the first finger from the left, and as this thread also feeds the yarn from the left corner of the throat, causes the 70s/1 mercerized and 150 denier to twist together at the feeding point, causing bad plaiting across the sole of the yarn.

Because of the fact that we cannot put enough tension on the two-thread silk we feel this is the cause of our trouble.

Do you think this is a practical style to make, using the two yarns individually, as stated? We use a combination 150 denier and two-thread silk with good results, but using the two individually, is some problem.

CONTRIBUTOR NO. 4594.

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Operating and Adjusting the Banner Knitting Machine.

PART SIX.

IN this, the sixth article of this series, the writer continues his discussion of common, every-day difficulties arising in the operation of the Banner knitting machine. In previous installments he has covered the subjects of setting up and adjusting various parts, etc., as well as the care of needles. Clipped copies of previous installments will be sent to those requesting them.

The Editor cordially invites all readers to discuss any point covered in this series, with the idea of presenting different methods and views on these subjects. Address your letters to the "Knitting Kinks" department of COTTON.

EDITOR COTTON:

Continuing my discussion of common operating difficulties in operating the Banner knitting machine, I will next take up

Machine Getting Stuck.

Broken butts often get under the carrier ring post or lowering picker bracket, causing pressure on the ring gear, which jams the machine. Small screws or other small articles left on top of the machine will find their way into the gears and jam them. A broken needle butt will become lodged in the needle race,

This Unique Vault Protects 140,000,000 Torrington Needles

— and assures you of an uninterrupted supply

A VAULT of reinforced monolithic concrete—in a detached building—with storage space for 140,000,000 finished Needles of all types—has been built by The Torrington Company. ¶ Complete protection for the large stocks of finished Torrington Latch and Full Fashioned Needles is assured by the unique construction of this vault. Windows and skylights are absent, illumination being provided by electric wires embedded in concrete. A ventilating system circulates properly conditioned air at a temperature and relative humidity which is automatically kept constant every hour of every day, regardless of outside weather conditions. ¶ The new vault entirely removes the danger from fire and sprinkler damage. The uniform heat and dryness obtained in the vault at all times eliminate every tendency of the needles to sweat or rust. Torrington Needles have always been dependable for quality—now you may depend upon Torrington to furnish an uninterupted supply of Latch and Full Fashioned Needles.

The Torrington Company

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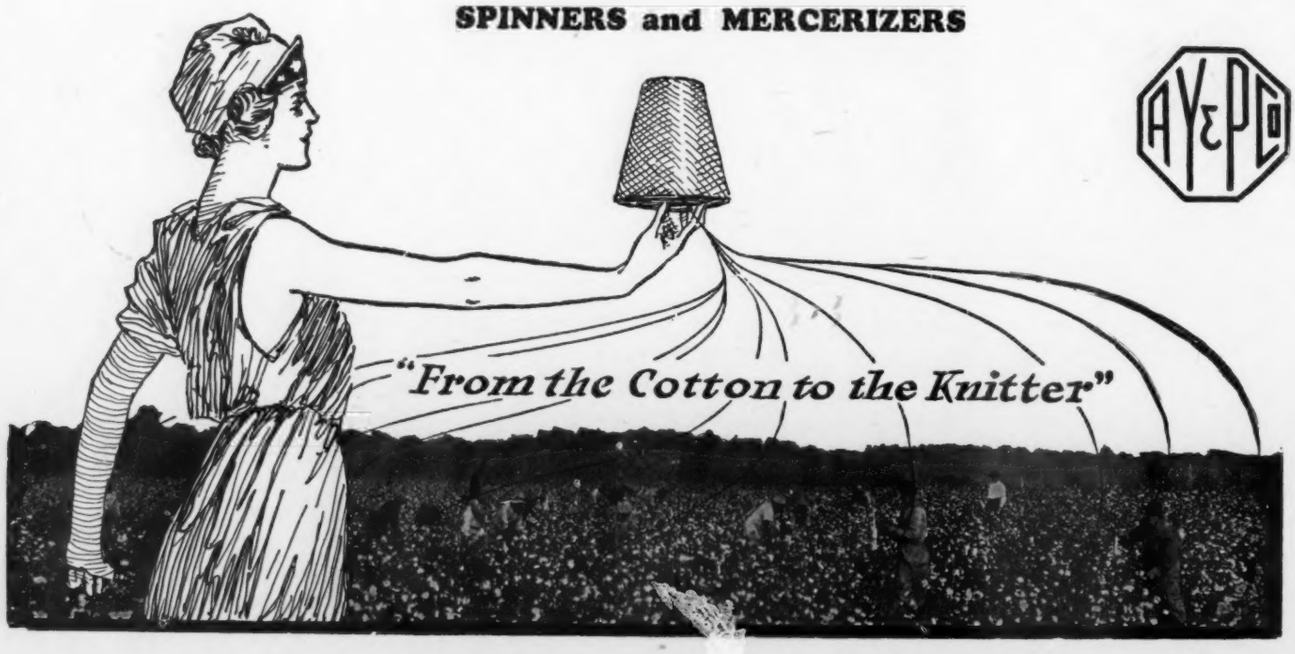
SPINNERS and MERCERIZERS



breaking several more and jamming the stitch cams or side cams out of adjustment. The stitch block should be removed and the cams thoroughly readjusted, as any part scraping against the cylinder will soon wear a ridge around it which puts unnecessary strain on the needles and the parts operating them. If the sinker cams are adjusted too closely, a broken sinker will lodge in the race, causing a jam, and quite often stripping butts from all the sinkers.

Negligence causes mashes. Many fixers have been called upon to fix what they found to be a "knitters' mash". When a needle or two breaks and knitters have the privilege of replacing needles, they quite often disregard a bent wall, which will eventually cause bad work or a more serious mash. If a couple of walls become broken in short butt needles the cylinder can quite often be reversed and long butts used where broken walls occur. This method greatly increases the life of a cylinder.

Sometimes the cylinder needle band gets worn, loses its tension and allows the needles to stagger in the cylinder, resulting in a jam.

If the lowering pickers do not lower the needles far enough and the raising pickers have insufficient tension, they will strike the two needles out of line and bound up into the raised needles, causing a mash on the return motion.

The cam block clamps come loose, allowing the block to ride up and down with the needles when in the heel and toe, thus throwing the raising pickers out of adjustment and causing bag ears or a mash.

On machines where the raise cam needle guard is used a mash quite often results from the guard breaking or screw coming loose. The guard should fit up to the side cam with just enough clearance for the needles to pass through.

A machine with insufficient throw when going on heel or toe will not allow all the long butt needles to ride upon the instep raise cam, and those not raised will jam into the lowering picker, often with sufficient force to break the picker. The machine should be given more throw, and if it lags on the snap, adjustments should be made for free movement.

Raising the carrier ring and not lowering it properly will bind the fingers or yarn change levers which will result in two or more fingers dropping at the change or a finger not being raised out of action, causing a strain or twisting of these parts. When lowering the carrier ring on empty needles, the ring will strike a latch, knocking that needle down out of line and jamming the machine when started.

If the cam plate 55 is not free to move up or down as necessary at changes, or if there is too much difference in the change from one cam to another (on fashion wheel) the result is that needle butts will jam into the center cam and break, causing a mash. Knitting too tight a fabric due to cam plate or sliding bar not having free movement results in breakage of needle hooks.

If the evener dog slips or is not set properly, it will jam into the nib on the stop motion wheel instead of passing it. A burred drum pawl, a nick in the tooth of the main ratchet 14, or a wobbly evener dog shaft may cause widening picker lever 36 to drop, thereby lowering the pickers out of action too soon when the adjustment is close, causing a mash. If the drum pawl is too wide at the front it will strike the heel links and push the chain forward, causing the machine to snap out of the heel or toe before all the needles are lowered, and often cause a mash.

The 8-tooth sprocket sometimes gets out of alignment and the chain links jam against the opening in the oil pan, causing the chain pawl to jam.

The clutch lever plunger screw may come loose, allowing the plunger to slip up, which causes the clutch to jam or the clutch cams 161 to get out of adjustment from continual snapping, which will cause the machine to jam going in or out of the heel or toe.

When in doubt as to whether the machine is stuck in the cylinder or gearing, remove the four cylinder screws and the trouble can be more easily located.

Splicing Yarn.

The best method to use in securing an even double sole is to set the double sole cam 88 so that the yarn goes in and out on the same needle at each side of the short butts, and then regulate the height of the splicing finger to widen the splice to the desired number of needles. The finger and yarn change lever must both be smooth, as the friction on both causes wearing,

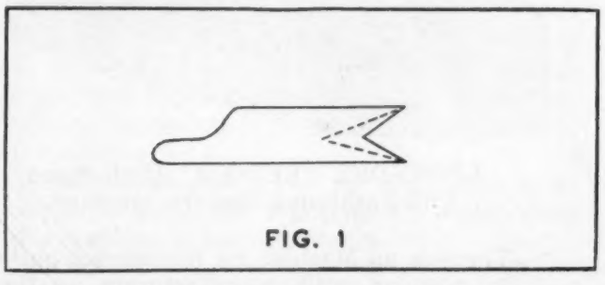
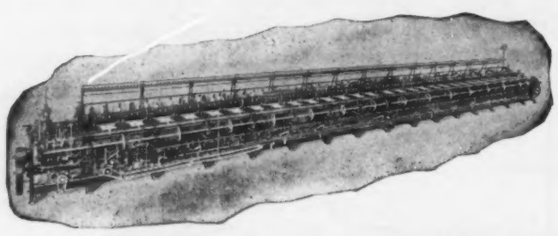


FIG. 1

which is apt to bind the finger when going into or out of the heel. The finger spring must be strong enough to give the finger a decided snap. By cutting the slot on the binder 370 (see Fig. 1) just a little deeper, the yarn can be better controlled to drop in more uniformly, and by bending out a trifle the coming out needle often remedies the trouble on that side. Bending this needle too much, however, will cause the yarn to loop at various points throughout the stocking, and this should be done only when necessary. Have just enough tension on the double sole yarn so it can be properly controlled, and it is seldom necessary to make a tension bracket. A nick in the finger, on the edge of the binder, on the binder plate or yarn guide, will cause difficulty in controlling the plaiting yarn, and these should be polished. Quite often the knife does not close properly, and the point will catch or cut the yarn. This is due to a bind in the yarn binder lever, cams or connections, and the knife should be adjusted so that the point is below the binder plate, with the top of the blade smoothly polished. The shoulder screw in the knife becomes burred from adjusting, which also has a tendency to bind or catch the yarn. The yarn guide 372 must not bind the yarn in any way, but merely keep it from getting too high or out of place. A straight needle line is very essential for good plaiting, as any bent needle acts the same as an

SPEED

IN this day of keen competition, manufacturers must use Machines capable of speedily turning out high-quality products. The two Hosiery Machines described below, for which ROBERT REINER, INCORPORATED is the sole American and Canadian representative, are famous for the speed with which they operate and for the extremely high quality of their products.



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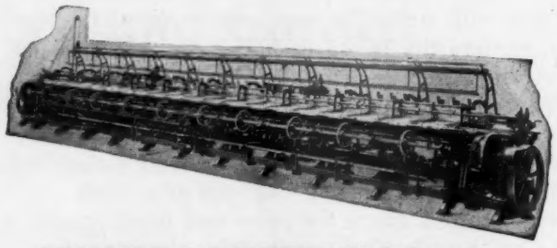

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The best materials available are used in the construction of this Machine, the product of the largest Flat-Knitting Machine Builders in Germany. It comes in any desirable number of sections and in any gauge. A uniform stitch is assured by the specially designed Jack Head and Slur Cocks. Oil rings are used in all main bearings. With this unusually rigid sturdy Machine the manufacturer can be confident of the highest quality of production at an extremely low up-keep cost.

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offset needle. Nicked or bent sinkers will likewise cause trouble in plaiting, and these should be examined and replaced.

When the slackening device is used it should be regulated to loosen the stitch in the short butt needles, just a trifle, as too much loosening makes a worse looking stocking than if the stitch is not loosened. The slackening device should work freely, and when it does bind it is quite often the cause of making a tight front and loose back stocking.

If the splicing finger does not drop in at the proper time, or too soon, it is usually due to a bad fashion link, or the pawl hanging on a link too long, thus giving the drum an extra kick. The pawl is adjusted when on a fashion link to give the drum one kick, and by taking the machine through by hand any bad links can be located to remedy this trouble. (Note: This does not apply to fashioning on the new pointed heel machine).

BANNERMAN.

(This is the sixth of a series of articles on this subject. The next will appear in an early issue.—The Editor.)

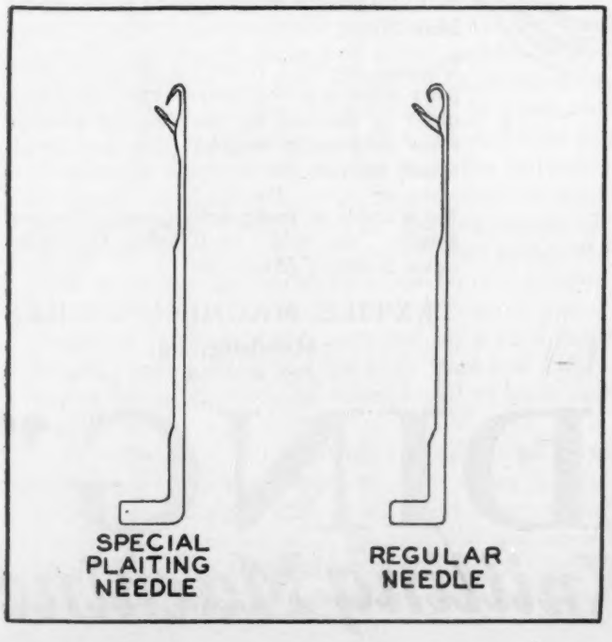
Plaiting on the Model K Machine.

EDITOR COTTON:

I read with interest the letter of "CONTRIBUTOR NO. 4109" in a recent issue of COTTON. He said he is having plaiting trouble on going inside of the pointed heel, producing a pointed heel stocking on a Scott & Williams Model K, 260-needle, 3½-inch machine. He uses 8-thread pure Japan silk for the body yarn, and 120s mercerized for the plaiting yarn. He said everything seems to be all right mechanically, and that by putting plenty of tension on the body yarn, he can get good plaiting, but this of course wears out the needles and sinkers.

If he has not already done so, I would suggest that he try using the special plaiting hook needle, to remedy a trouble of this kind. With this needle he can take off most of the tension on the body yarn.

The accompanying sketch will illustrate the differences between this needle and the regular needle. You will notice that there is considerably more space in the hook of the regular needle than in the hook of the special plaiting needle. The 8-thread pure Japan silk, which he is using for the body yarn, is of course the first yarn in the needle. This is where the needles come in. It will be clearly understood that the yarn will get up in the hook and will not give the 120s mercerized yarn, used for plaiting. a chance to get above the body yarn, which would result in misplaiting. This is why it is possible to take most of the tension off of the body yarn when using this plaiting hook needle.



In addition to the conditions described in his letter, I believe he will find it possible to secure great benefit by using this needle on most any kind of yarn as well as those he mentions.

CONTRIBUTOR NO. 4149.

Sleaziness or Crepiness in Full-Fashioned.

EDITOR COTTON:

I should like very much to see some discussion in the "KNITTING KINKS" department with reference to the causes of sleazy and crepy appearance on full-fashioned stockings. I would appreciate very much reading something as to whether this sleaziness is caused by knitting, or is the result of handling either in the boiling-off or dyeing operations. I am sending along a sample of a 4-thread all-over silk 45-gauge full-fashioned stocking which has a number of crepy and sleazy designs both in the garter welt and the boot of the stocking.

I shall be very glad to read in "KNITTING KINKS" some general discussions with reference to the causes of this condition in full-fashioned work.

CONTRIBUTOR NO. 4581.

How About Stop Motions for Model K Machines?

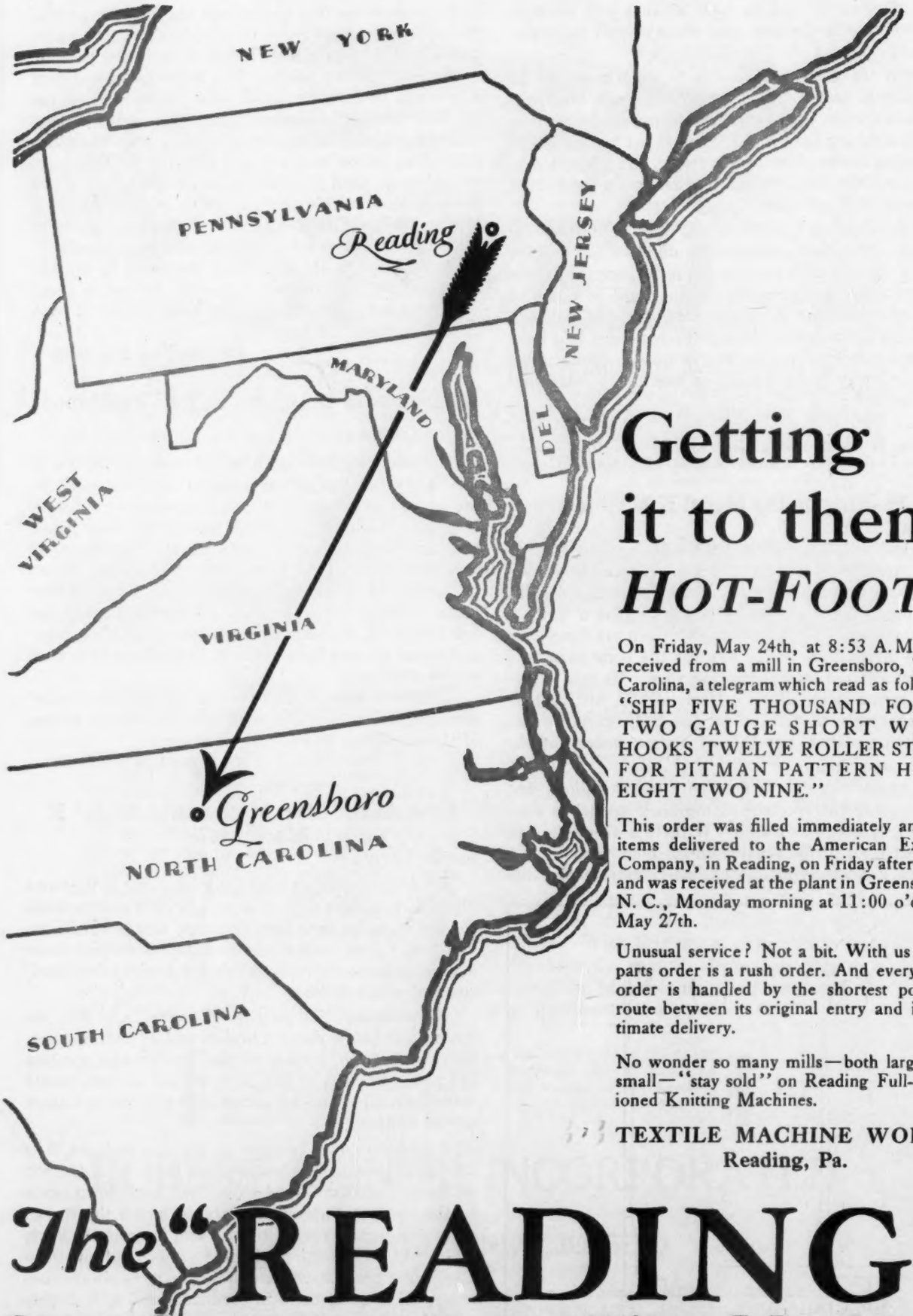
EDITOR COTTON:

We are considering equipping our Scott & Williams Model K machines with stop motions, but before doing so, desire to be sure that they are a worthwhile investment. Our head mechanic informs us that there are advantages and disadvantages to be considered, some of which follow:

Advantages. The purpose of course is to stop the machine at the moment a broken end or slub appears, keeping it from getting to the needles and spoiling the hose. Savings of this sort, we are advised, would more than repay for the cost of stop motions in a short period of time.

Disadvantages. In order to use stop motions, it is necessary to run the threads from the cone to the top of the stop motion thread guide, then back down again to the needle. This extra distance which the thread must travel causes extra tension and drag on the yarn, which has a connection with the various cut-out troubles in the hose. Mechanical adjustment is always necessary in keeping them in condition, and with different sizes of thread they must be adjusted accordingly.

What we desire to know is, are stop motions practical, and what type of stop motion has proven best



Getting it to them *HOT-FOOT!*

On Friday, May 24th, at 8:53 A.M., we received from a mill in Greensboro, North Carolina, a telegram which read as follows: "SHIP FIVE THOUSAND FORTY TWO GAUGE SHORT WELT HOOKS TWELVE ROLLER STUDS FOR PITMAN PATTERN H SIX EIGHT TWO NINE."

This order was filled immediately and the items delivered to the American Express Company, in Reading, on Friday afternoon, and was received at the plant in Greensboro, N. C., Monday morning at 11:00 o'clock, May 27th.

Unusual service? Not a bit. With us every parts order is a rush order. And every rush order is handled by the shortest possible route between its original entry and its ultimate delivery.

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The "READING"
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from experience with the various stop motions now on the market?

CONTRIBUTOR No. 4592.

Proper Size of Cones for Knitting.

EDITOR COTTON:

We have been having considerable trouble on our seamless knitting machines with our knitting yarns, which we believe are not of the proper size to get the best results in knitting. Our trouble is uneven delivery from the cones as it is being fed to the needles, causing horizontal lines in the hose. We appreciate the fact that other mechanical adjustments also can cause this type of trouble, but as this has been completely checked, have come to the conclusion that the trouble is due to the size of the cones we are using. We would like to get the experiences of COTTON'S readers on this subject.

What are the proper sized cones to use on such numbers as 70s/1; 70s/2; 80s/2; 120s/2 mercerized, 4-5-6-7-8-9-10 thread Japan silk and 150 denier rayon yarns? How large should cotton yarns be and what type of cones should these yarns be wound on to get the best results? Any information we can get on this subject would be very much appreciated by us.

CONTRIBUTOR No. 4593.

Lubricating and Cleaning Full-Fashioned Machines.

EDITOR COTTON:

I read with much interest the question of "CONTRIBUTOR No. 4075" with reference to cleaning and oiling systems to be used on full-fashioned hosiery machines. I hope that the following remarks will be of some help to him.

The best system of cleaning full-fashioned machines is to keep them clean. The only way we know to systematize the cleaning of a full-fashioned machine is, just as far as possible, to convince the knitter of the importance of keeping continually after grease, gum, rust, etc., every day, especially on such parts as tension wires and rings, snapper tensions, carrier rods, etc. There are good metal polishes on the market, as well as pulverized stone and other materials which will lend themselves very favorably to cleaning up a machine which has been allowed to get in a bad condition. If the machine is looked after carefully from the time of erection and cleaned daily the employment of drastic methods will never be necessary to get the machines clean. The problem of cleaning the machines at the end of the week will resolve itself into a negligible operation, and the machine can be run up to within a few minutes of stopping time. It is, of course, a good idea to see that the machines get a good general cleaning once a week, and the metal pans and floor under machines ought to be cleaned well at least once a week.

The oiling of a full-fashioned machine is not so very different from the oiling of any other machine. Enough of the right kind of oil ought to be employed for the different parts of the machine and no more should be used. It is self-evident that oil found on goods and standing in puddles under the machines and dripping off the bearings does not do the machine any good and is, therefore, a waste of both oil and energy. It is necessary to oil a typewriter once in a while, but if the operator should so flush the machine with oil that oil and grease spots would be all over the paper she turned out she would not expect to hold a place in any organization very long. It is important to exercise care in taking care of a typewriter that can be bought for $100.00, and being careful of its output, how much more important is it to oil properly a machine that costs $10,000.00 and which turns out a product far more valuable than the product of a typewriter.

Lubricating any machine should be a matter of common sense practice, using, as far as can be determined, the right oil for every purpose, and using just enough and no more. On a full-fashioned machine it will be advisable to use at least three different grades of oil; one of best grade suitable for occasionally oiling needles and sinkers, another for the bearings and heavier working parts, and still another for the cams or coulier motions.

CONTRIBUTOR No. 4079.

EDITOR COTTON:

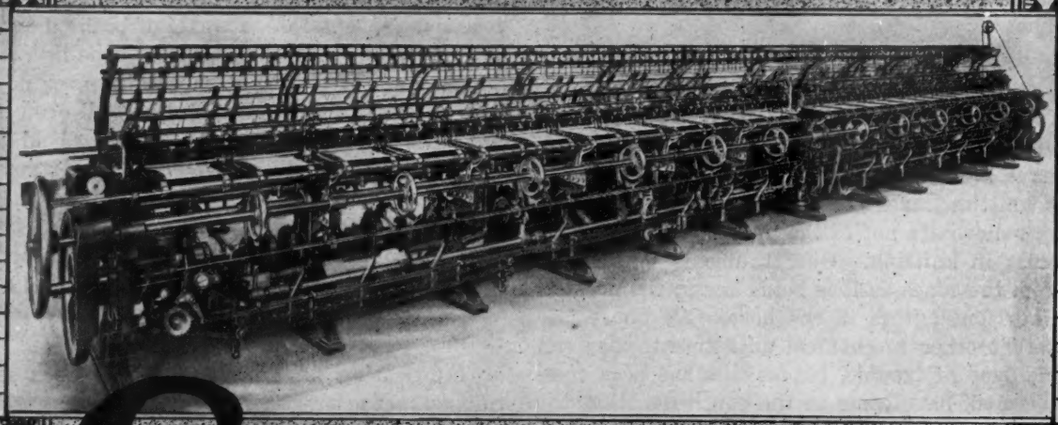
With reference to the question of "CONTRIBUTOR No. 4075", in a recent issue of COTTON, concerning the cleaning and oiling of full-fashioned hosiery machines, I wish to say that while this may seem trival it is very important, and much thought and attention may be profitably given to this subject.

As a rule the knitter who keeps his machine correctly oiled and cleaned has less trouble with his machine and gets more production and better quality.

The construction of a full-fashioned machine is such that, with all the cam motions and sliding parts, it requires a lot of oil. If a suitable oil is used and properly applied in the right proportions no trouble will be had in cleaning the oil off the machines. It is difficult to get the knitter to realize that a few drops of oil that stay put are worth a gallon that runs off on the floor, and that oil spots make more re-dyes in the finishing room than any other cause. For this reason it is necessary to have an expert oiler coach the knitters on oiling, and it will be necessary for the overseer, in many cases, to enforce the instructions.

The type of oil to use on a full-fashioned machine is a subject that must be given very careful consideration. I have found that a good grade of white stainless spindle oil (made from pure mineral oil without the animal and vegetable fats) is best suited for the needles, sinkers, jack heads, carrier rods, all light parts and all the bearings. An oil can with a long spout with a small hole that can be inserted in the oil holes in the rollers, etc., should be supplied for the application of this oil. For the draw cam pan, and all other main shaft cams, a heavy semi-fluid oil or a liquid grease should be used. This can best be applied to the cams with a small paint brush, while the machine is running. With this method of oiling much cleaning may be eliminated.

The hardest thing to remove from the machine is gum and rust. The best way to prevent rust is to



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clean the machine often, and, once a week to coat with an anti-rust solution the parts that have the greatest tendency to rust. I have found alcohol to be the most suitable cleaner for removing the gum deposit from the spray from the wet silk which settles on the snappers, thread rods, carrier rods, etc. Saturate a piece of cotton hosiery waste or rag and wrap it about a small stick and slide it back and forth between the carrier rods. Parts not accessible with a rag may be cleaned with a stiff brush. All parts cleaned should be oiled immediately following the cleaning. All the cams and rollers should be wiped clean once each week and fresh oil applied. The jack heads should be cleaned about every two months with gasoline. To do this, run the machine empty, let the needle bars out, and cover the needle heads with stiff paper folded over the needles to prevent the trash from getting in the beards of the needles. Then start the machine and shoot gasoline into the sinkers around the folding bar, putting about one pint of gasoline on twenty heads and run five minutes. Repeat, and run five minutes more, then follow with half a pint of spindle oil and run for ten minutes. Let the needle bars back in again and knit a few inches of cotton waste to make the machine ready for production again.

To clean a machine properly it will take one man about two hours. A thorough cleaning of the machine once each week should be sufficient. As I said before, the jack heads should be cleaned with gasoline when it is necessary; this may be determined when the sinkers and dividers cease to move freely, but usually about every two months will be sufficient.

Some mills furnish a crew of machine cleaners who become experts to do the cleaning, but I rather like the plan of letting the knitter do his own cleaning and holding him responsible. It has a tendency to make him a cleaner knitter and less extravagant with oil. It is necessary to have the head fixer or overseer inspect each machine and put his okeh on it before the knitter leaves his job. This is a good way to single out the slackers among the knitters. A knitter who does not take enough interest in his machine to clean it and oil it properly and put straight needles in is not worthy of the job, for these are the things that contribute much to the successful operation of the machine.

CONTRIBUTOR NO. 4080.

New Non-Catching Slide Hook for Silk Frames.

The Steel Heddle Manufacturing Co., Philadelphia, Pa., have introduced a new double acting slide hook for use on Universal Ideal continuous slide frames, which, it is stated, is a decided improvement over the old style hook. This new hook is formed by doubling the metal lengthwise, producing a hook with much added strength. The metal is not pressed tightly together except at the notch for the heddle rod. A slight space remains between the two sides where the slide rod is inserted, giving free movement on the slide rod and easy adjustment for the warp while the loom is in motion. A slight offset of the bottom ends of the hook on either side keep the heddles free from catching in the slot; furthermore, there is no wear to the heddle on the small lump which constantly caused considerable friction resulting in the breaking of the heddle at this point. The rust proof cadmium finish is used to make it impervious to water and conditions of dampness.

Drop Stitches on 2x2 Underwear.

EDITOR COTTON:

With reference to the questions asked by "CONTRIBUTOR No. 4098," who has trouble with drop stitches and holes on a 12-cut stationary cylinder machine knitting 2 x 2 rib with three of the 12 feeds plaiting a thread of 200 denier rayon over 40s/1 cotton, the following suggestions are offered:

In the first place, I think 200 denier rayon is too heavy for plaiting over 40s/1 on a 12-cut machine. The correct yarn size for this cut is approximately 22s cotton. The use of 150 denier rayon in place of 200 denier will make the stitch easier. Best results are secured in plaiting by having the plaiting and the backing thread about the same size.

The 2 x 2 rib is one of the most difficult of all stitches for rayon. The dial cams should be set so that the dial stitch follows that of the cylinder by two needles. Casting-off will then occur two from the cylinder and two from the dial needles.

A yarn guide should be used which will deliver the rayon thread close to the needle stem and as low and near to the point where the stitch is drawn as possible without permitting it to be pinched by the closing of the latch. This will be helpful in eliminating drop stitches and plaiting troubles. Operate the machine with as little tension on the fabric and threads as is possible.

The proper shaping of the cams is also an important item in rayon knitting. Stitch cams should be sharp at the point and not too sloping. The raising cam should release the tension from the stitch immediately when once it is formed.

CONTRIBUTOR NO. 4106.

Strength Before and After Bleaching.

EDITOR COTTON:

What difference is to be noted in the breaking strength of knitted fabric after bleaching? By breaking strength I mean the breaking strength in pounds along the wales obtained by placing a 3 x 1-inch piece of cloth between a pair of 1-inch jaws? That question was asked recently by "CONTRIBUTOR No. 4112" in "KNITTING KINKS."

A piece of unbleached fabric cut into a strip running with the wale, an inch wide and three inches long, will break under a steady pull of 35 pounds, and break under a jerk with a five-pound pull. Both 12-needle cut and 26s yarn.

A similar piece of fabric bleached will break under a steady pull of 33 pounds and break under a jerk with a 4 2/3-pound pull. Both 12-needle cut and 26s yarn.

The pulling strength increases with a finer cut in the dial and cylinder, but on coarser cut, the pulling strength varies depending upon the cut and yarn. The great trouble with all knitted fabric, even when the "Auto-lap" or "Flat-lock" stitch is used, is that the tear is invariably at the seam. This can be partly overcome by reinforcing the weak part, or at the supposed strain, by a grape stitch, or by inserting a separate piece over the seam and sewing down on the four sides. Another method is doubling the material in

the seam.

I believe that before long a rapid felling machine without a folder will be produced, creating a stitch similar to the ones now used. This should eliminate all weakness at seams. Until this felled seam is produced re-inforcement of some sort is necessary.

In all of my experience, outside of the trouble described at the seams, I have found more breaks caused *across* the wale than up and down. The latter trouble is caused by a poor grade of cotton with a short staple, unsatisfactory knitting, or the lime and acid used during the bleaching process.

My method of testing the pulling strength of various cuts and yarns is to fasten a vise upside down to a work-bench, then clamp the fabric at one end in the reversed vise, and to the other end of the fabric clamp a vise of known weight, adding enough weight until the break occurs. The added weights can be weighed, which, added to the known weight of the vise, will give the approximate pulling strength of the fabric tested.

B. P. R. (PA.)

Removing Dry Transfers from Hosiery.

EDITOR COTTON:

In a recent issue "CONTRIBUTOR No. 4087" asked for suggestions to remove dry transfers from the feet of hosiery. He said he is using the so-called regular ink, not the indelible nor fugitive transfer.

It is found necessary to remove these transfers in cases where one shade has gone out of fashion and is stripped of the original color and dyed a readily disposed-of, fashionable color, because in re-dyeing the transfer loses its freshness and does not come out either in stripping or re-dyeing.

At best the transfer comes out in patches, and some of the transfers have a habit of getting into the stockings and making spots that cause untold worries to the mill.

One day, some years ago, the boss gave me a stocking with a new shade transfer on it, instructing me to wash it several times to find out how fast it was. I could not see the reason for using the fastest transfer that could be found except, perhaps, they wanted the transfer to stick on the hose as a constant reminder to the customer that hosiery bearing their trademark was the best to buy, and not to be confused with another make. That, however, was a good many years ago when there were but a few shades to choose from and when a shade went out of fashion it was put into black, which was the best and steadiest seller.

Then came a time when black could not be sold any more, except to mourners and old women, but what woman wants to be old nowadays when grandmothers go flappering and capering with their granddaughters? Shades came to be the vogue. They came so numerous and changed so frequently that the dyer no sooner had learned to dye one than it went out of fashion, and another or several others came to take its place. The discarded shades had to be disposed of. The stock had to be kept moving. At first the pairs were split and the ones without transfers stripped and re-dyed, the stockings carrying the transfer being paired together. In this way the stock of that particular discarded shade was reduced in half. That also in time had to be changed into another color or sold at a loss. As the transfers could not be removed successfully by any means known to the dyer and finisher, it became a problem. We tried everything we could think of: alcohol, benzene, ether, chloroform—but all to no avail. The transfers resisted all our efforts.

Finally one day the boss asked me to analyze the composition of that transfer and see if we could find a way to remove it. That gave me an idea. Why should I waste my time and energy on such a task when it would be a lot easier to ask the maker of those transfers what they used in it? Also, why should they not find for us a way to remove them when necessary?

The thing looked so simple I wondered why it had not occurred to me before. I told the boss about it and he smiled. He said, "Of course that's the thing to do. If one doesn't accommodate us in that we will find some other dealer in transfers who will." So we wrote to the house from which they were bought, and put it up to them, with the result that within a short time we received a can of an alcoholic solution that was rubbed on the transfer with a stiff brush, and completely and effectively removed the transfers and we never had any more trouble.

As there are so many different kinds of transfers used it is not possible for me to tell this contributor what he should use for his particular one, but I am sure that if anyone is having trouble along that line and will put it up to his dealer, he will come to his aid.

There is one point about which I will caution the reader, and that is that the operative, in removing the transfers, should do so very carefully, because if some of the transfer material rolls off on the foot and gets into the stocking, it has a way of sticking in the loops of the stitches and showing up in the finished re-dyed goods like specks, which will look very much like grease spots and are very hard to remove except by again using the same solution on those spots, but most likely the dyer would be blamed for those spots unless he can show or prove that he cannot be blamed for them, something I know to be a very difficult thing to do.

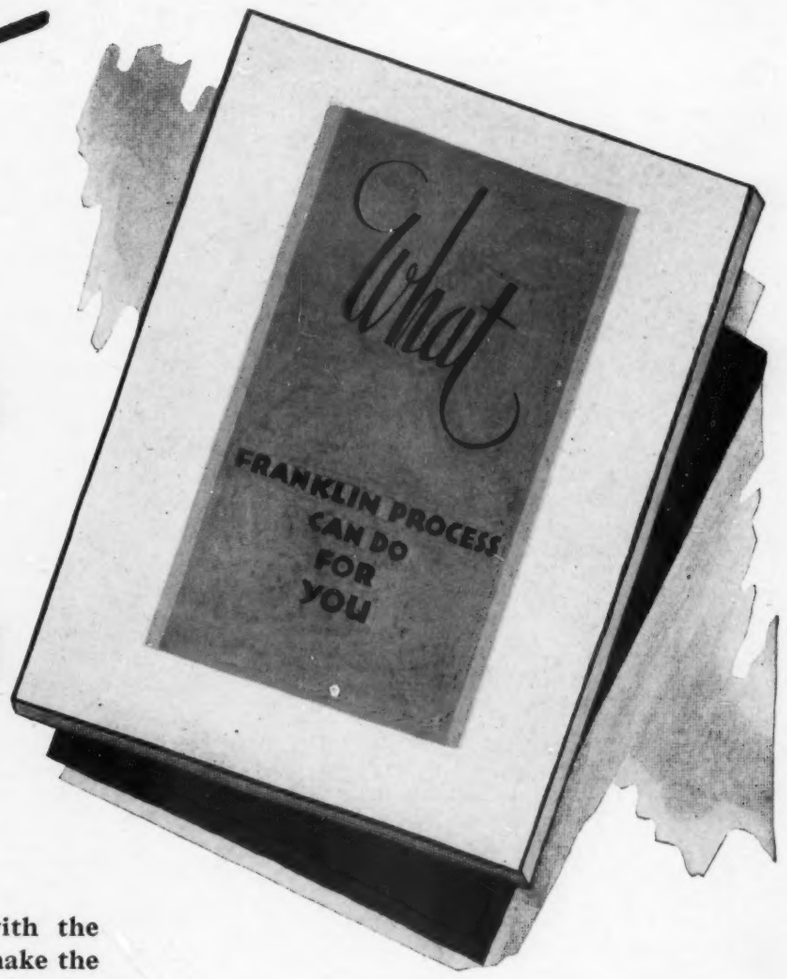
FARBER.

Pyrogene Pure Blue 2RL.

This is the name of a new dyestuff which has just been brought out by the Society of Chemical Industry in Basle. It is described in circular No. 313, copies of which may be secured from Ciba Co., Inc., Cedar and Washington Streets, New York City, who represent this organization in this country.

The manufacturers announce that this new brand dyes a considerably more reddish hue than any of the previous Pyrogene Pure Blue brands. As usual, the company states, the dyeing is done from the alkaline, sodium sulphide bath, whereupon the material is squeezed out and oxidized. Its fastness as to water, perspiration and overdyeing is emphasized. This product, it is announced, may be used in all branches of cotton dyeing. The announcement states that in piece dyeing it does not produce bronzy effects. The company states that it has good solubility and dischargeability with chlorate, and that after-treatment with metallic salts does not improve the fastness qualities.

Get acquainted with this newest FRANKLIN PROCESS SERVICE



YOU are already familiar with the many services we render to make the manufacturing of yarn-dyed fabrics more profitable to you.

Now we are going still further and offering a free merchandising service to help users of Franklin Process Colored Yarns sell their fabrics.

Cutters, wholesalers, and retailers, throughout the country, will learn about the merits of colors applied by the Franklin Process wound-form dyeing method and at the same time they will be told that your fabrics contain these colors. The entire plan is explained in our portfolio—"What Franklin Process Can Do For You."

Send today for a copy. Both the portfolio and the service it describes are offered free of all charge.

FRANKLIN PROCESS COMPANY
Largest Job Dyers of Yarn in the World
also Yarn Spinners, Manufacturers Glazed Yarns, Dyeing Machines

FRANKLIN PROCESS
Commission Dyeing of Yarn in the Wound Form

▪ *PLANTS* ▪

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SOUTHERN FRANKLIN PROCESS CO.
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Chattanooga, Tenn.

FRANKLIN RAYON CORPORATION
Providence, R. I. So. Boston, Mass.

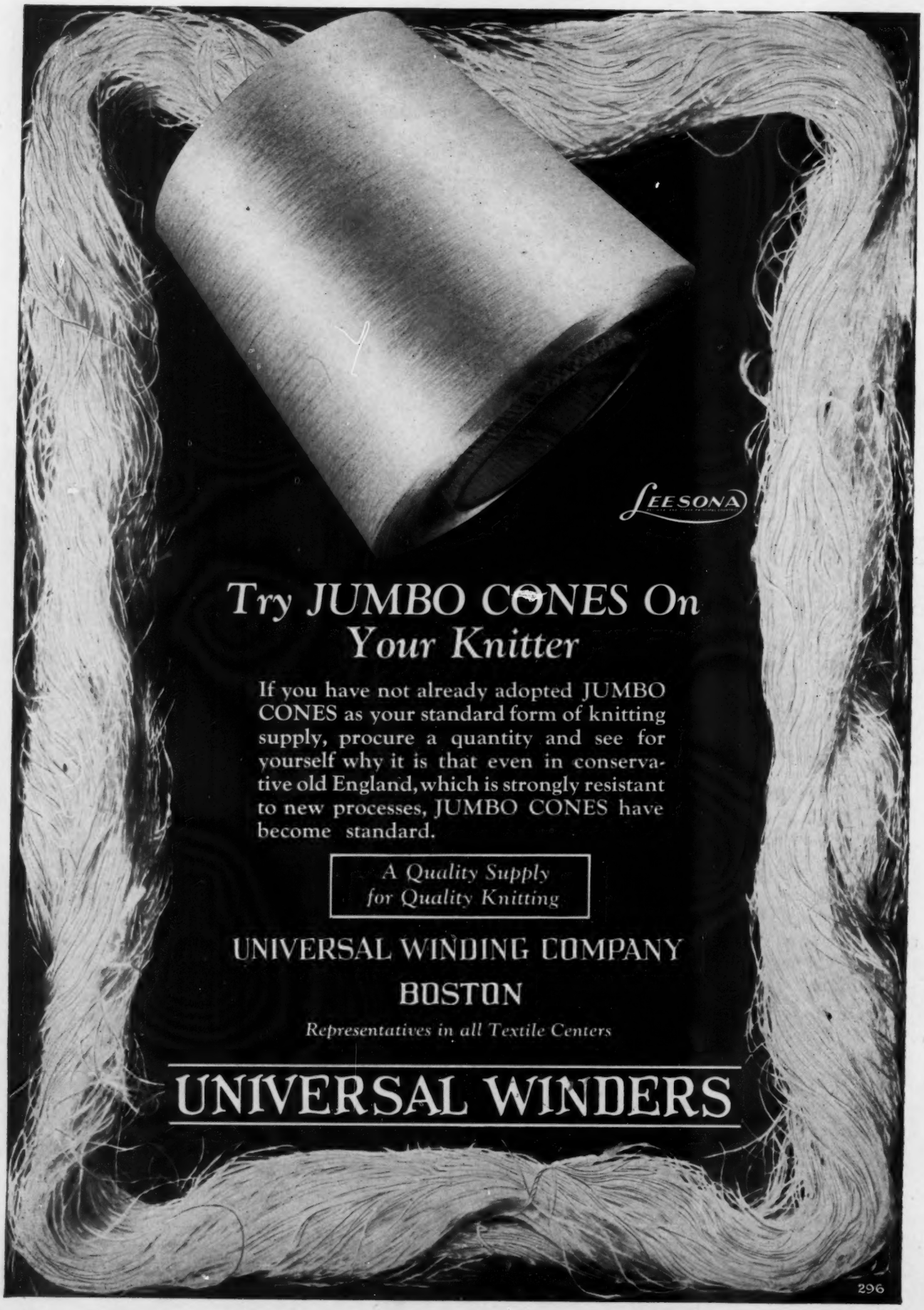
New York Office, 66 Leonard St.

Mail this Coupon for Your Free Copy

FRANKLIN PROCESS COMPANY
564 EDDY ST., PROVIDENCE, R. I.

Gentlemen: Please send me your portfolio—"What Franklin Process Can Do For You." I understand this is to be sent without cost or obligation to me.

NAME.....
TITLE.....
NAME OF COMPANY.....
STREET.....
CITY.....
STATE ..... AD-291.


LEESONA
Try JUMBO CONES On Your Knitter
If you have not already adopted JUMBO CONES as your standard form of knitting supply, procure a quantity and see for yourself why it is that even in conservative old England, which is strongly resistant to new processes, JUMBO CONES have become standard.
A Quality Supply for Quality Knitting
UNIVERSAL WINDING COMPANY
BOSTON
Representatives in all Textile Centers
UNIVERSAL WINDERS
296

Stripping Off a Black.

EDITOR COTTON:

Recently a correspondent submitted to me a sample of a stocking, from which he desired to strip a black. The stocking which he sent to me was made out of two different kinds of knitted fabric. Both kinds are made on large circular knitting machines of the type used to knit gloves and underwear material. This fabric is knitted in large tubular form, bleached or dyed, cut up with a specially constructed cutting machine in pieces of different shapes to fashion the garment to be made, and the pieces are then sewn together to make the garment. This style is sometimes called "fashion cut hosiery," for that is just what it is—hosiery cut and sewn to fashion.

Top, pointed heel and toe in this stocking are closely, fine knitted pieces of glove silk, and the boot of the stocking is of a fine ribbed silk fabric. The back seam and the several pieces are sewn together with thread, and proof that the stocking was fashion cut from dyed material and sewn together afterwards is shown in the fact that the thread with which the sewing was done did not resist the stripping, but came out white.

The man who submitted this said that he had already tried to remove it with hydrosulphite of zinc and acetic acid, and found it to resist his efforts, in such a way as to make him believe that it was dyed with aniline black.

In the knowledge of this writer, there is at least one firm in this country knitting and making up that kind of hosiery, but there are some manufacturers who import the knitted fabric from Europe and do the cutting up and fashioning themselves. The piece submitted to me seems to be of the latter kind.

I am inclined to agree with the correspondent in the belief that his stocking was dyed with an oxidized black. He tried to strip it with a stripping agent which we use successfully whenever we want to turn some black into a more readily salable shade, but on this stocking it only had the effect of improving the black somewhat.

FARBER.

Routing Fancies Through the Mill.

EDITOR COTTON:

In a recent issue "CONTRIBUTOR No. 4027" requested a method of routing retail fancies through the mill. In reply to this request I will give him the method we use for this purpose.

From the original order an order is made for each department foreman. See Fig. 1. These cards are of a different color for each department and bear only the necessary working data. These are kept on the foreman's desk in a file. They are checked each day with the production sheet and when finished are okehed by him on that date and returned to the office. When the order requires different rider tickets, marking, packing or shipping, the word over is placed on the bottom of the ticket and notations made on the re-

Knitting DEPARTMENT
ORDER No. 12345 DATE 12/3/28
MUST FINISH 12/28/28
STYLE 675 1250 DOZ.

COLOR	SIZE												
	6	6²	7	7²	8	8²	9	9²	10	10²	11	11²	12
Black	10	10				20		20		50	50	50	1

J. Doe SUPT.

FIG. 1

DATE TO FINISH
KNITTER
MACHINE No.
ORDER No.
STYLE
SIZE
DOZEN
COLOR
TOP
HEEL & TOE
STRIPES OR DESIGN
1
2
3
6
7
8

FIG. 3

Let others tell you why they prefer Butterworth Klauder-Weldon Hosiery Dyeing Machines

What Some Users Think of Butterworth Klauder-Weldon Hosiery Dyeing Machines
KLAUDER-WELDON DYEING MACHINE DEPT.
H. W. BUTTERWORTH & SONS
BETHAYRES, PA.

In this illustration (which was taken in the plant of Brownhill & Kramer, Philadelphia), note how the goods are held behind the baffle or stop plate until they are ready to fall on the soft and yielding water.

No sliding over perforated surfaces or dropping on to hard metallic surfaces—an exclusive feature of Butterworth-K.W. machines.

IN the folder are a few letters—all tell the story of quality dyeing and how Butterworth-K.W. Hosiery Dyeing Machines handle the sheerest chiffon with absolute safety.

Let us send you these letters and at the same time we'll send along the *Reasons Why* executives who look into the question of quality hosiery dyeing in their own plants usually install Butterworth-K.W. Hosiery Dyeing Machines—the Wayne Knitting Mills, at Fort Wayne, Indiana, for instance—where 25 and 50 pound regular rotary type and the 100 pound lift type Butterworth-K.W. Hosiery Dyeing Machines were installed.

Shall we send the letters?—And the Reasons Why? Both are ready to mail.

Klauder-Weldon Dyeing Machine Division

H. W. BUTTERWORTH & SONS COMPANY, *Established 1820*

BETHAYRES, PA.

PLANTS at PHILADELPHIA and BETHAYRES, PA.

New England Office: TURKS HEAD BUILDING, Providence, R. I.

Southern Office: JOHNSTON BUILDING, Charlotte N. C.

In Canada: W. J. WESTAWAY CO., Hamilton Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING MACHINERY FOR THE TEXTILE INDUSTRY

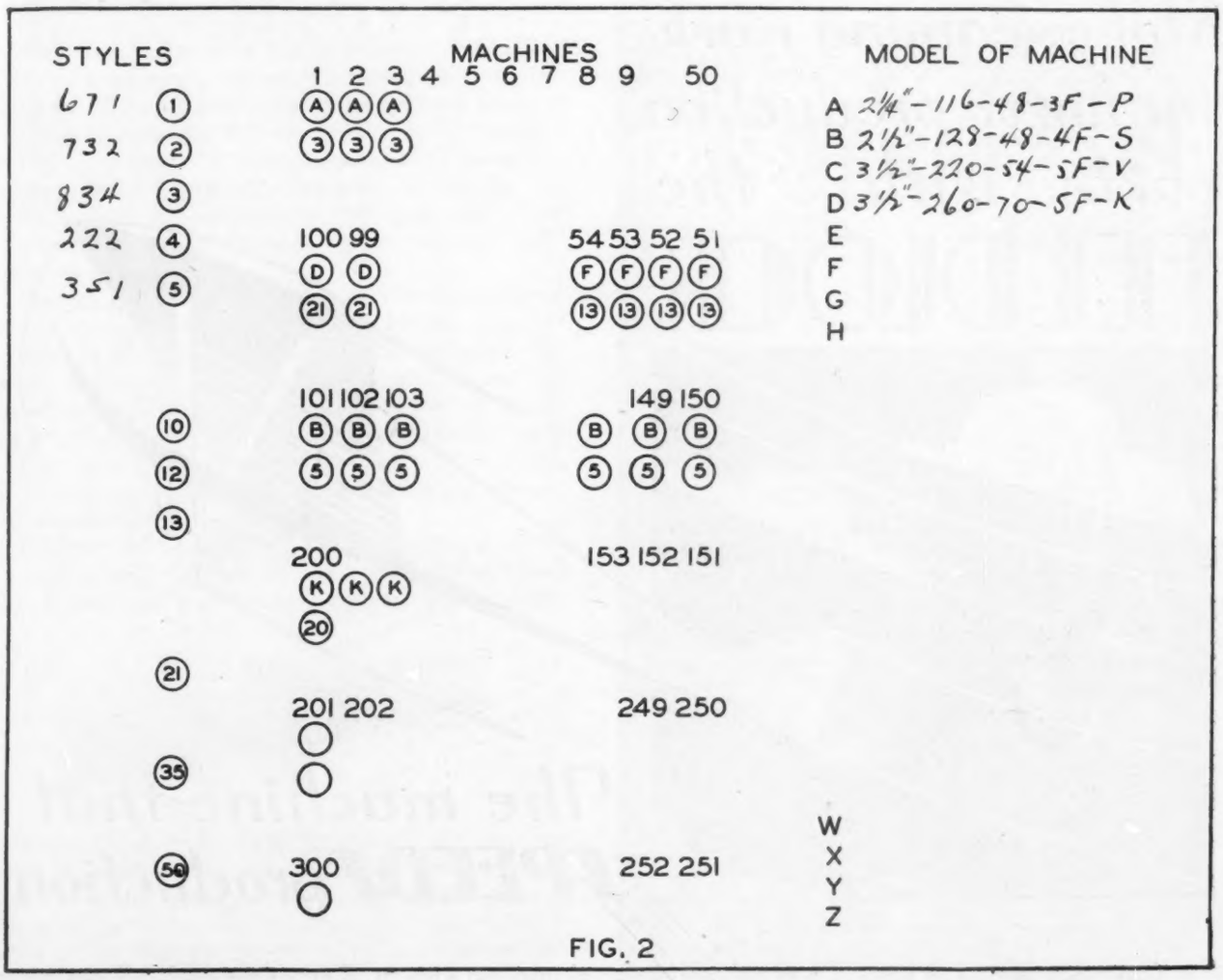


FIG. 2

verse side of the card.

In the knitting room a chart of that room is hanging on the wall by the foreman's desk, Fig. 2. On one side of this chart is the key to the model of the machines—push button *A* indicates a 2¼-inch, 116-needle, 48 gauge, three finger plain machine, and every machine in the room of that model has an *A* button under it. On the other side of the chart is the style key—style 351 is button 5, and all machines on that style have a 5 button on them. Idle machines have no style button on them which is an indicator as to whether the mill is rushed or slack. Any changing in the room must be immediately recorded on the chart.

On each machine hangs a permanent tag showing our number, size, style set-up, number of needles and gauge for the convenience of the fixers. This tag is always changed when the style or size is changed.

A book of styles and samples is kept on the foreman's desk. The book of samples shows what styles we made for display, on what type of machine and of what material these samples were made. The book of styles shows what we are making and is similar to the sample book excepting where the customer has ordered a change. It contains actual production where the sample book shows only probable production.

To check up on style 834 merely requires a glance in the style book for materials, a second glance at the chart to locate the machines and a few steps to the machines. By merely glancing at the chart and locating the machines, one can step over to the machine and get the desired information off the tag hanging on the machine. The chart is very useful in planning the work for the machines as it saves running around the floor, counting up, scratching the head, etc.

The order ticket required by the knitter, Fig. 3, to operate a machine or set of machines hangs on the machines. The knitter totals daily production on the back of the ticket which serves as an extra check on production and reduces over knitting on an order. When an order is completed a new ticket must be secured before operating the machines.

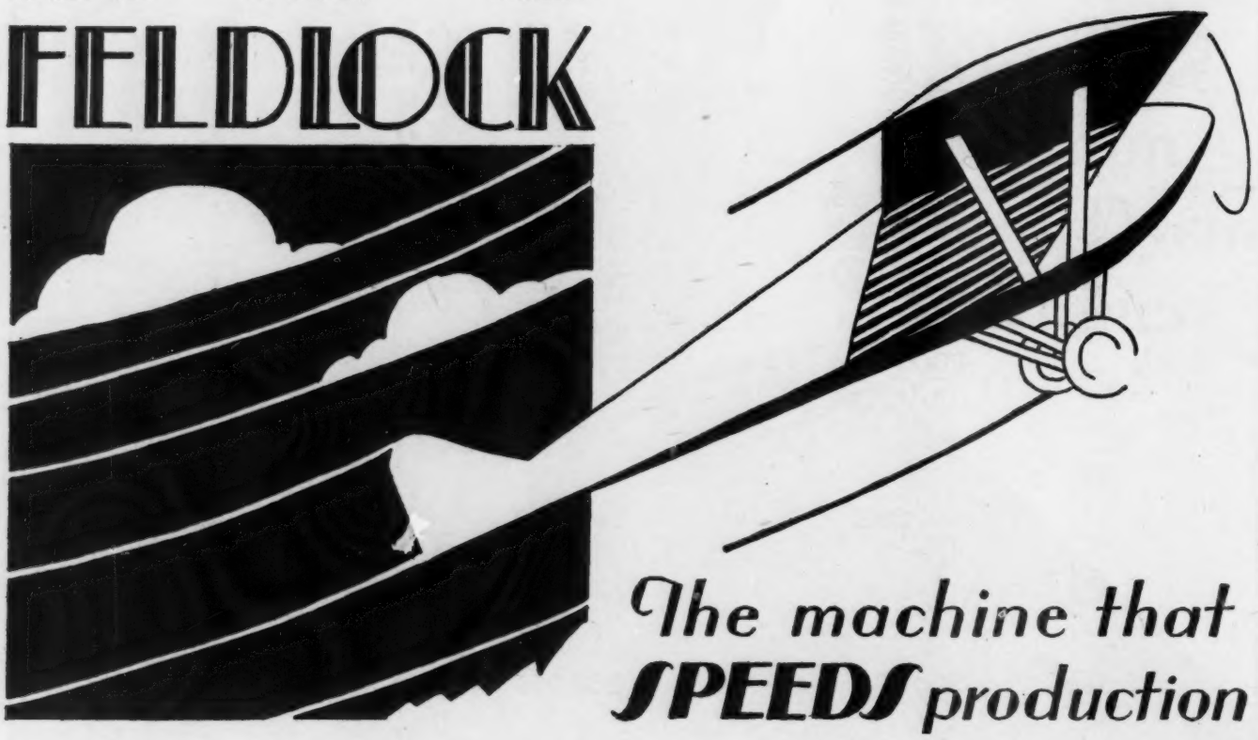
As a size for an order is completed on the production sheet it is checked on the order and a glance at same indicates how the order is progressing. Each department likewise checks its orders from the production sheet and it is no hard matter to secure any and all information concerning the progress of a style or order.

CONTRIBUTOR NO. 4201.

New Office of Carrier Opened.

The opening of a permanent engineering and sales office in the Buhl building, Detroit, Michigan, has been announced by the Carrier Engineering Corporation, of Newark, New Jersey. The company specializes in air conditioning. The Detroit office is under the direction of Herbert Peacock.

Make Seaming work for lower production costs with the FELDLOCK



The machine that SPEEDS production

IT isn't good policy to skimp on the quality of lapped fell seaming. Production costs must be lowered in another way. Many manufacturers have found that way. It is the use of the Feldlock, "The machine that makes production."

Sole United States and Canadian Agents for Cornely and Uniart Embroidery Machines.

The Feldlock feeds *off the arm*. It puts seaming at the top notch of volume. And it is so skillfully performed that this seaming adds to the value of your garments.

This sure and easy method of increasing profits by lowering production costs is worth investigating. We recommend that you send now for the new, illustrated Feldlock booklet.

INVESTIGATE!

WILLCOX & GIBBS SEWING MACHINE CO.

HOME OFFICE: 658 Broadway, New York, N. Y., U. S. A.

Needles make the seam, Genuine W & G Needles make the good seam

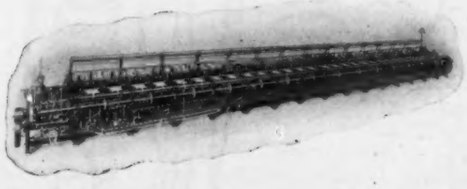
WRITE OUR HOME OFFICE FOR SAMPLES MADE ON THE FELDLOCK, OR SUBMIT YOUR OWN FABRICS FOR SAMPLE PURPOSES

Einsiedel Reiner Full Fashioned Machine.

An item of interest in full-fashioned circles in this country is the announcement that the factory of the Einsiedel "Reiner" high speed full-fashioned machinery, of which Robert Reiner, Incorporated, Weehawken, N. J., is the sole American and Canadian selling agent, is being appreciably increased in size and capacity to meet the demand for this equipment. The factory is located at Einsiedel near Chemnitz, Germany.

Hosiery manufacturers will recall the exhibition of this equipment at the Philadelphia Knitting Arts Exposition in April. Robert Reiner, Incorporated, announce that these machines are available in any desired number of sections and in 39, 42, 45, 48, 51, 54 and 57 gauge, with seven carriers and needle heads varying from 14 to 16 inches, driven by a two h.p. motor. The machine produces 65 full courses per minute, it is stated.

Different attachments are provided in the machine for making split plaiting, plaited heels, narrowed heel caps, French and high heels. The machine also auto-



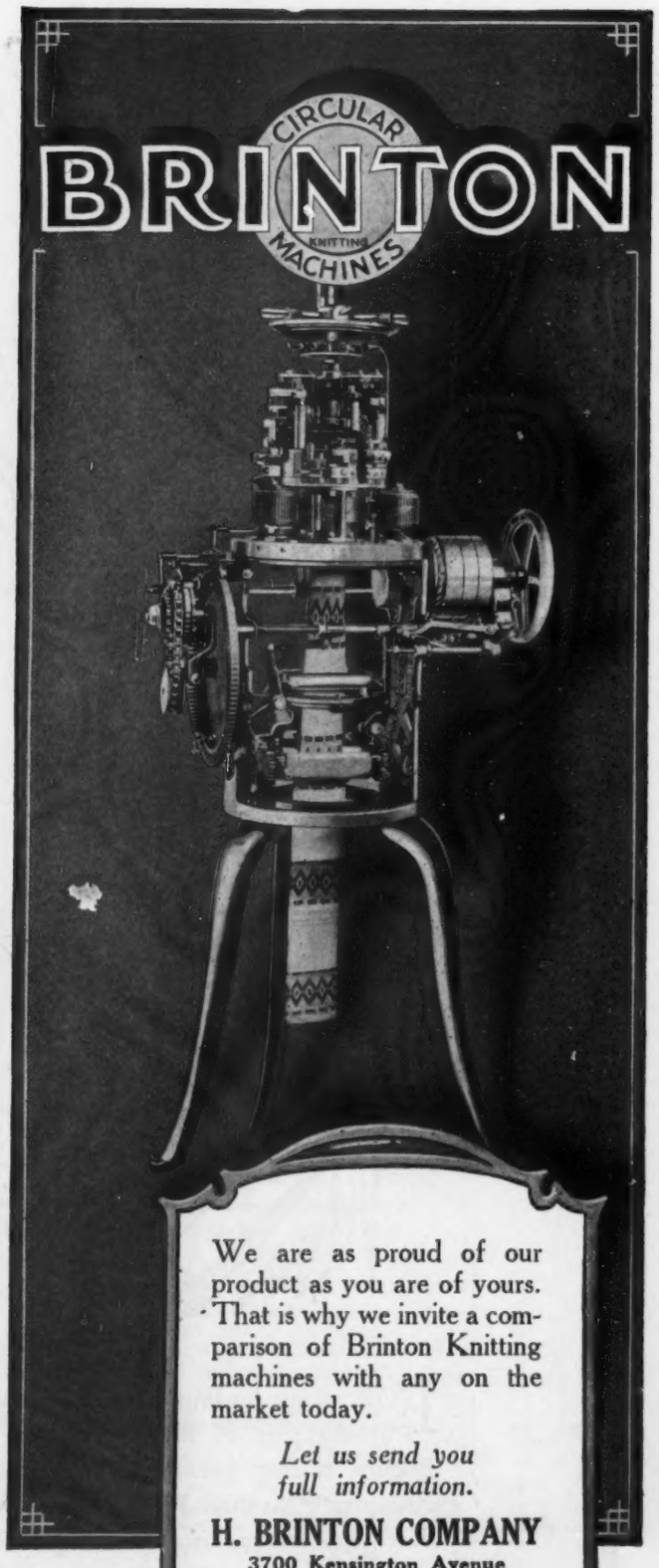
matically slows down when narrowing and making heels. The lubrication system is such that all parts of the draw are automatically oiled every 50 courses. The machine is chain driven, the drive being located in the center, from which point all racks are controlled.

The Einsiedel Reiner hosiery machine is equipped with a device for preventing the machine from turning back, and is also equipped with roller bearings in all-wear rollers to insure an even take-up.

In addition to being the sole American and Canadian selling agent of this machine, Robert Reiner, Incorporated, act in the same capacity for the Seyfert and Donner hosiery machine, which is made by one of the foremost knitting machine manufacturers in Germany. This machine is built essentially on the same principle as the Einsiedel Reiner machine. The same needle is used in both. A conspicuous feature of the Seyfert and Donner machine is a new slur cock and jackhead which permits it to retain a speed up to 75 courses per minute, the representative states.

New Ciba Colors.

Sample card No. 727 of the Society of Chemical Industry in Basle is entitled "Cibanone Dark Blue BO, MB, MBA, Cibanone Black BF," and shows the use of these dyestuffs for deep marine blue and black shades. The dyestuff is dissolved either through the stock vat procedure or directly in the dye vat. When coloring with Cibanone Black BF, and addition of 20 to 30 grains of sodium chloride for each liter of dye liquor is made so that the bath may be used to its fullest extent. After dyeing, the rinsing, scouring and soaping follow. The dyestuffs produce strong bright marine blue shades on cotton piece or yarn, which may be shaded with Cibanone Blue G, it is announced by Ciba Co., Inc., Cedar and Washington Streets, New York City, representatives of the society in this country.



We are as proud of our product as you are of yours. That is why we invite a comparison of Brinton Knitting machines with any on the market today.

Let us send you full information.

H. BRINTON COMPANY

3700 Kensington Avenue
Philadelphia

FOREIGN AGENTS

Great Britain and the Continent: Wildt & Co., Ltd., Leicester, England.
South America: M. Buchsbaum, Calle Alsina 1814 Buenos Aires, Argentine Republic.
Australia: J. H. Butter & Co., Sydney, Melbourne.
China and Japan: Elbrook, Inc., 50 Peking Road, Shanghai, China.

Hosiery Manufacturer: *"Gee, my game's all off today. Got my mind on a new hosiery package I've been trying to design."*

Treasurer: *"Why don't you think about golf and let Kaumagraph worry about that package. They're doing that kind of thing every day in the week."*

FOR many leading hosiery manufacturers, Kaumagraph is actually doing part of the selling job — without raising selling costs. Because hosiery packing lithographed by Kaumagraph first attracts the customer; then directs her attention to the hosiery. Kaumagraph produces hosiery packing with a personality — *packing that packs a sales appeal.* If you have a suspicion that your packing *lacks* sales appeal, consult us. No obligation.

KAUMAGRAPH COMPANY . . . 200 Varick Street . . . New York City

Branches at Boston, Chicago, Philadelphia, Charlotte, N. C., Chattanooga, Tenn., Paris, Ont., Paris, France.

Among the Knitting Mills

THE Pauline Hosiery Mills, Inc., Little Rock, Ark., recently announced plans for doubling the capacity of their plant. The corporation was formed only a few months ago by a few well-known business men of Little Rock.

J. J. McDevitt Co., Charlotte, N. C., was awarded the contract for the construction of the addition to the rear of the present building of the Morganton Full-Fashioned Hosiery Co., Morganton, N. C., which will be three stories in height, 50 x 60 ft. A new building, three stories in height, 103 x 122 ft. will be constructed adjoining this addition. The cost of the work is to be $100,000.

Ground has been broken for the erection of a new knitting mill at Columbia, Miss. The newly organized corporation is under the direction of H. L. White, who was elected president of the organization.

Rapid progress is being made on the new building of the Magnet Mills, Inc., Clinton, Tenn., which is expected to be completed within 30 days. The new building is to be used for a finishing plant. J. E. Sirrine & Co., Greenville, S. C., are the engineers.

The construction of a new building at Mount Airy, N. C., 50 x 140 ft., one story, which will be occupied by a knitting concern that is going to move its machinery from a northern city around July 1, is now under way. The name of the company has not been announced; they will manufacture boys' sweaters.

The purchase of a mill in Providence, R. I., has been made by C. E. Spivey, of the Scottsboro Hosiery Mills, Scottsboro, Ala.; the machinery of the Providence mill will be dismantled and moved to Scottsboro. Fifty 42-gauge full-fashioned machines will be installed in a new building.

A new hosiery mill will be designed by A. K. Landau, who was formerly connected with Berthadale Drapery Mill, McComb, Miss. The new mill, which is to manufacture men's silk hose and have a capacity of 1500 dozen pairs daily, will also be under the supervision of Mr. Laudau.

The Cadet Hosiery Co., Philadelphia, Pa., announce the erection of a main building and a number of warehouses, also mill village and community center, to take place in the near future at Columbia, Tenn. Robert & Co., Inc., are the engineers.

The construction work of the new full-fashioned mill being erected for the Union Mfg. Co. at Frederick, Md., is now well under way. The mill was designed and construction is being supervised by Lockwood Greene Engineers, Inc., of New York City. The plant is expected to be in operation early in July.

The new two story brick and steel full-fashioned knitting mill for the Toronto Hosiery Co. at Toronto, Ont., has recently been completed and is now in operation. This building is an extension to the present one-story full-fashioned knitting mill, and the second story of the new mill connects by bridge with seamless knitting mill. The first story of the new building is for knitting machinery, while the finishing machinery is located in the second story. The mill was designed and construction supervised by Lockwood, Greene & Co., of Canada, Ltd.

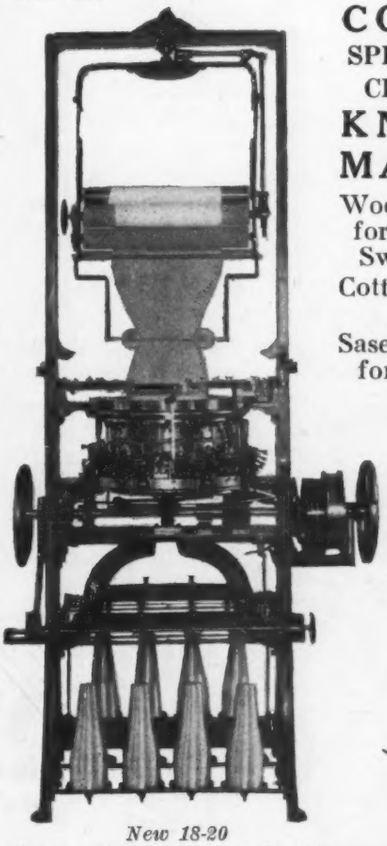
The new full-fashioned knitting mill and dye house for W. F. Hofford, Inc., at Weissport, Pa., has recently been completed and is now in operation. The machinery of the mill consists of fine gauge knitting machines and necessary finishing machinery, including dye house equipment. Lockwood Greene Engineers, Inc., of New York City, were the engineers.

A New Plant to be Erected.

By the combining of the American Chatillon Corporation and the Tubize Artificial Silk Company of America, a new company will be formed which will erect a plant for the manufacture of acetate of cellulose yarn. This plant is to be erected near Hopewell, Va., and is to be an exact reproduction of the American Chatillon Corporation's acetate rayon plant in Rome, Georgia, according to announcements by the American Chatillon Corporation.

IT KNITS PEP-
into the goods

Knitted goods that are full of life and delightfully springy sell easily. To obtain these results a large percentage of mill men specify and use

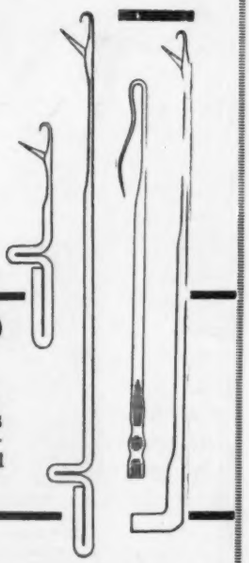


New 18-20
Spring Needle Rib Top Machine with Stop Motion

COOPER'S
SPRING NEEDLE CIRCULAR RIB
KNITTING MACHINES

Wool or Worsted for Bathing and Swimming Suits
Cotton, or Wool, for Underwear
Sase, Rayon or Silk for Fine Undergarments

The Most Elastic Fabric Knit



COOPER'S HIGH SPEED LATCH NEEDLES

With Non-Turnable Rivets—ALSO
COOPER'S SPRING BEARD NEEDLES
are standards of uniformity and accuracy, and the spring is tempered into them right.

CHARLES COOPER CO.

Manufacturers of
KNITTING MACHINERY AND SPRING AND LATCH NEEDLES
Bennington, Vermont, U. S. A.

G. H. ROGERS, Traveling Representative, 877 Warren St., Albany, N. Y.
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M. BUCHSBAUM, Calle Alsina 1814, Buenos Aires, Argentina.

J. E. FAIRBROTHER
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419 Johnston Bldg.
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VENTURING forth to increase their effectiveness in bringing to the Industry the standards of engineering and manufacture, accumulated through sixty-five years of constructive research . . . Atwood has established this post in the vastly enterprising South.

Charlotte, North Carolina, is now the Southern center for Atwood's engineers. From there the needs and problems of the workers of Silk and Rayon will be efficiently served.

THE ATWOOD MACHINE COMPANY

STONINGTON, CONNECTICUT

NEW YORK, N. Y.	WILKES-BARRE, PA.	LOS ANGELES, CAL.	CHARLOTTE, N. C.
267 Fifth Avenue	965 Miner's Bank Bldg.	Title Insurance Bldg.	419 Johnston Bldg.

The KNIT GOODS MARKETS

THE hosiery primary markets at the beginning of July presented indications of mills crowding the dealers with goods. Early in June scattered manufacturers said they found competition keener and greater difficulty in moving women's full-fashioned silk. Some of the large factors, apparently not much disturbed by conditions, commented that it seemed to dawn on the trade suddenly that hosiery had been accumulating while it was believed goods were in demand and, therefore, no excess production.

It appears many trade interests had been misled by reports of numbers of full-fashioned mills operating day and night and shipping their production. These reports were, in the main, correct, but at the same time there were mills which had been quietly conducting a curtailment program. Many which had been running anywhere from 20 to 24 hours a day found it expedient to employ but one shift of operatives, for a 10-hour day. Thus production was being lessened in some quarters while maintained at high speed in others, and in the meantime quite a number of additional machines, contracted for a year ago and but somewhat recently delivered, had been started producing. And, there seems no doubt, considerably more full-fashioned silk hosiery is being manufactured than in the summer of 1928.

Identical mills are shown in the statistical report of the Department of Commerce to have turned off 32,000 dozens less of full-fashioned silk hose in April than in March, showing that, taking new installation in consideration, curtailment must have been quite drastic, in anticipation of a possibility of the markets becoming overcrowded. But reports from identical mills show that over 220,000 more dozens were manufactured by them in April this year than in the corresponding month of 1928. There was, also, a slight increase in the output of women's seamless, all classes. Such exhibits by manufacturers supply in part an explanation for a situation more nearly in buyers' favor.

Even though there remained a fairly safe balance as between production of and potential consumption of women's full-fashioned stockings, it is not difficult to find reasons for distributor conservatism in the matter of commitments. As is pointed out by observant manufacturers who make no attempt to hide the truth, retailers all through the periods of hot weather supplying the usual foretaste of Summer temperatures, were wholly at sea as to what might be the demand for what is termed bare leg hose, very sheer, knitted on circular machines.

Although some factors are prone to sneer at the suggestion of seamless knit supplanting full-fashioned for even a short time, it probably can be set down as a fact that others are annoyed at the prospect such really is the case. Leading shops in the larger cities, notably New York, Philadelphia and Chicago, eight or ten weeks ago hooted the idea they would put seamless in stock. In June these same establishments were crying loudest for deliveries of seamless sheer stockings for simulating bare legs, this according to the testimony of a dozen or more manufacturers. And it can be said with no exaggeration that the comparatively few seamless mills making this type of stocking were more busily engaged in June than all but a comparatively few of the full-fashioned mills. Leading up to this reversal of conditions as applying to full-fashioned and seamless by classifications were the shipments and unfilled orders accounted for by the Department of Commerce April Bulletin.

Net shipments of women's full-fashioned hose, all classes in April, declined by about more dozens from March than did production—the figures indicating the falling off in shipments being 60,854. Net shipments of seamless, all classes, increased by more than 21,000 dozens, while unfilled orders at the end of April amounted to 102,896 dozens more than at the end of March. Thus it is shown in the reports of identical mills that seamless hose increased in unfilled orders and net shipments, while full-fashioned declined in both instances, shipments dropping by 39,000 dozens.

Danger of Market Upset
If Mills Dump Surplus

THE situation as it appeared last month was foreshadowed in the compilations by manufacturers covering April, but the statistical information necessarily could not be distributed by the Commerce Department until after manufacturers were able to practically anticipate the showing, and the slowing down as put in effect in numbers of mills really began in advance of distribution presenting a somewhat more sluggish aspect.

Due to firmness by the larger factors among manufacturers, prices for women's hosiery remained comparatively steady through June. Where there were breaks they had no effect on the market in general, being confined more especially to certain lines of fine gauge goods. It is pointed out that if increasing use of seamless sheer is the explanation for any letdown in demand for full-fashioned, it would be felt primarily in popular price lines of fine to medium gauge, and it appears 45 has been hit to some extent.

A common price for 45-gauge 4-thread silk stockings with picot top is and for some time has been $12 a dozen. Among the early June offerings were several lots priced $11.00 and guaranteed as to gauge and thread. In fact, one manufacturer's line was offered at $10.75 to a department store buying for "sales promotion", and it was no surprise when a chain store exploited what were described as closeouts at $1.39 a pair, for perfects. Only a very few years ago $14 was about the bottom price for standard 45-gauge chiffons. They have proved a popular number and appear to have been overproduced since the seamless sheer sprang into favor among an element which con-

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A Processed Yarn of the Highest Quality
Under the trade mark name of "Durene," Dixie offers a processed yarn of superior quality, made of an exceptionally high-grade cotton fibre that has been scientifically treated to produce super-radiant lustre, increased tensile strength, greater elasticity and absorption.
Garments of "Durene" have won instant favor with department stores and women's specialty shops throughout the country because of the style adaptability as well as the lustrous, highly absorbent quality that materials made of "Durene" possess.
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sumes a great deal of sheer hosiery.

The prospect of but little disturbance, if any, of prices by reason of a presumptive accumulation of hosiery is heightened by the fact curtailment of output already has been practiced for some weeks and the further fact that during the summer months it is customary for a number of northern manufacturers to entirely eliminate Saturday work. In May some Philadelphia mill heads were boasting they were too well supplied with orders to think of granting operatives more than a Saturday half-holiday who now look forward to five-day weeks to the end of August. The markets will snap back into their early spring groove the quicker if manufacturers do not lose their heads. Commenting on the need for coolness, one of the foremost factors in the New York markets said:

"It is not unusual for hosiery to be accumulated at times. There is an accumulation now, and it is not so easy for mills to sell their product. I have no fears as to the big mills standing firm on their lists, unless the rank and file of the small concerns get panicky and dump their surplus. If that ever starts, then the big mills might take a hand. It should not be lost sight of that dumping in a too-well supplied market establishes lower levels of prices. The smart ones will take advantage of low quotations and buy heavily, leaving less to be bought when the market again hits normal, run special sales and get the consumer accustomed to lower prices. Then, when buying for Fall begins, as it will before the end of Summer, the first thing to confront sellers will be resistance to former prices, new levels having been set by the indiscriminate flooding of the retail markets. Mills, most of them, have had a good run and made money, and can better afford to shut down for a bit and sit steady and 'live on their fat' for a while, than to sacrifice their merchandise and in doing that invite trouble for themselves in a few months from now."

A Philadelphia manufacturer of 42-gauge all over silk chiffons selling direct to the retail trade for some weeks has been operating to the limit of single shift capacity. The management saw an opportunity for increasing sales if two eight-hour shifts of operatives were employed. The board of directors would permit no night work. "So long as we can fill all the orders of all our customers we should be satisfied and not look for more orders while we know of mills that are not selling their production of three days a week," was a sentiment expressed by one of the directors, and that is to be the policy for the prsent.

Dealers Show Interest In Plainback Seamless Knit

A MANUFACTURER in Reading, Pa., has achieved so much success with 300-needle 4-thread silk stockings for meeting the so-called bare-leg-appearance craze that he has undertaken to expand his seamless field as to standard lines. He has copyrighted the term Ank'l-Form'd as a trademark under which he will sell both silk and lisle numbers direct to retailers. He claims for his improved construction of seamless that it is as snug fitting as full-fashioned, that, of very fine gauge, it provides for elasticity to the extent that the same stocking fits a slim, medium or outsize limb as well as does a full-fashioned. The concern is

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Because Standard Yarns are spun in our own spinning mills, bleached and mercerized in our own finishing plant and dyed in our own dye house, you get the uniformly high quality which reduces seconds at the same time that it builds repeat demand for your product—be it hosiery or fabric.

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FINE SEAMLESS AND FULL FASHIONED HOSIERY

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Gentlemen:

We have purchased transfers from a great many concerns but you have given us the very best service we have ever received, and as long as we can consistently do so we are going to stick to your good concern.

Very truly yours,
MAY HOSIERY MILLS, INC.

Lehigh Silk Hosiery Mills, Inc.
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New York, N. Y.

American Trade Mark Corp.,
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New York City.

Gentlemen:

We are glad of this opportunity to inform you that your Vulcanart Marker which we have adopted for trade marking our hosiery has proven very satisfactory.

We have used a good many million transfers since the inception of our business but find the Vulcanart Marker, from every standpoint, to be the finest quality we have ever used.

We trust our plensant relations will continue.

Thanking you very kindly for all services rendered, we remain

Very truly yours,
LEHIGH SILK HOSIERY MILLS, INC.

We specialize in original trade markings. May we design one for you?

AMERICAN TRADE MARK CORPORATION

254-256 West 31st Street,
NEW YORK, N. Y.

knitting plain and fancy heel hose, and some of its customers are using its black heel number. This manufacturer is encouraged to believe that women's seamless stockings, knitted properly, can be reinstated in many establishments from which they had been banished.

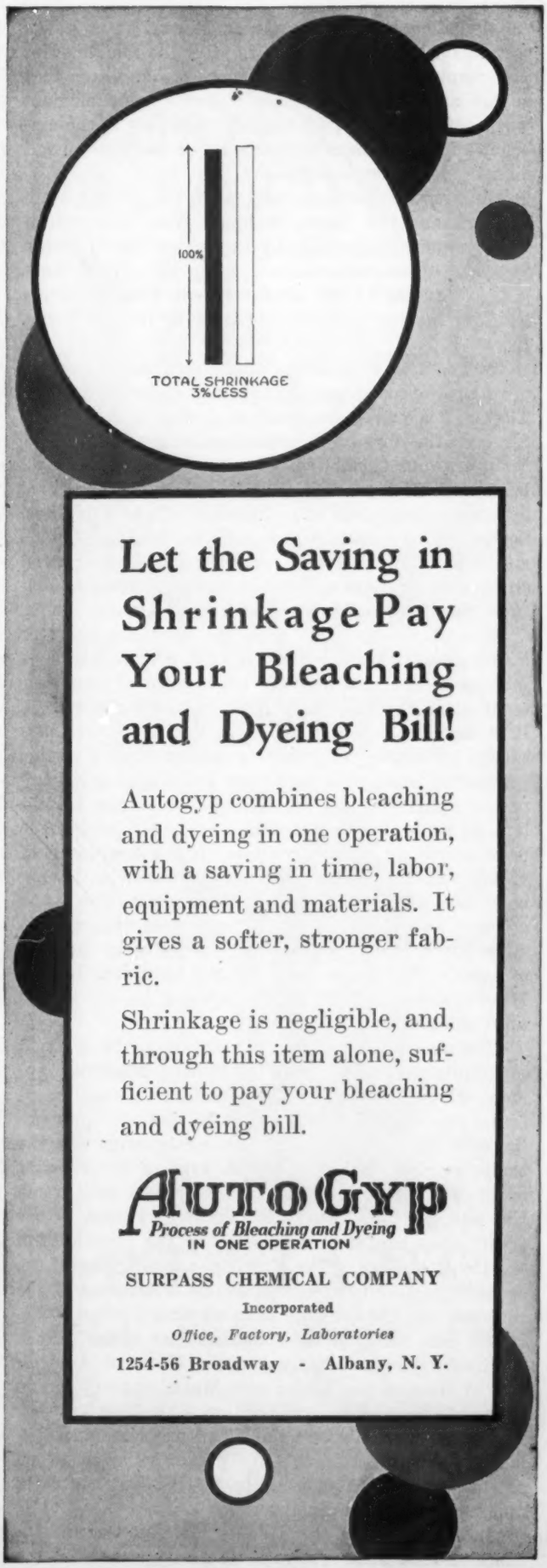
It is related that E. T. Slattery Co., a well known Boston retailer, who ten years ago took seamless hose out of the store's line and declared it never would again be carried in stock, is going strong on a high grade circular knit. In this connection it is an interesting incident that a New York newspaper which stated in an article prepared by a person apparently not well informed, that "there is no method by which a seamless stocking can be knitted to conform with the shape of the leg and foot," heard from a number of retailers of the first water who are doing a thriving business in seamless bare-leg stockings. The newspaper printed a retraction. Otherwise it would have lost some of its retailer advertising patronage. Seamless is featured by many of the shops where "the best people" are embraced in the shopping clientele, and this season, for perhaps the first time in years, engravings with which advertising matter is illustrated emphasize stockings without a seam. Fortunately for the manufacturers producing them, they are not likely to soon suffer from competition.

As a general proposition, shipments of seven-strand silk hosiery have declined since Summer temperatures are being registered. Yet this medium service weight seems to have lost none of its grip as a sales promotion stocking. Stores which in June were displaying seven thread to hem at about a third off regular prices were able to relieve manufacturers of considerable quantities. But stores conducting such sales used well known branded lines, from which it may be inferred that price and brand rather than weight of fabric were the all powerful factors in the big outgo of hosiery out of season.

There developed recently more interest in 42-gauge hose, as more profitable for popular price brackets than 45 and held in more esteem than 39. But there is, seemingly, an outlet for almost any gauge, a Philadelphia mill a few weeks ago booking a chain store order for 40,000 dozens of 36, for deliveries running through several months. The stocking is but 29 inches long and is one of the lower priced lines of full-fashioned legwear on the market. The mill in this instance operates 14 machines of 36-gauge, and singularly enough, has no 36-gauge footers, employing 39 for the 36-gauge leg stockings. As no new machinery of these coarse gauges is being installed and all that is in use doubtless has been written off several times in inventories, manufacturers operating on such equipment may figure a very low overhead in their operating cost. By the same line of reasoning, they may be able, some of them, to offer a valid explanation for their low prices of finer gauge goods.

Infants' Sock Manufacturers To Improve Their Market

SOME time in July a few manufacturers of infants' socks will be showing samples and naming prices for the next season. It was the opinion of a half dozen or more manufacturers well along in June that fa-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Autogyp combines bleaching and dyeing in one operation, with a saving in time, labor, equipment and materials. It gives a softer, stronger fabric.
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vored customers of one or two mills would be given a peep at 1930 styles a day or two after the Fourth. Not that manufacturers favor an early opening, nor that buyers are expected to place orders of any moment much before the first of August—it simply is the ambition of a few manufacturers to be the first to get a buyer's slant on new styles.

Since two well-known sock mills, the Acorn, Reading, Pa., and the Vogue, Waupun, Wis., have effected a merger for specializing in socks of multi-design tops and, in large extent, controlling the output, there is heard rumor of two or three more manufacturers entering the combination, operating as Infants Socks, Inc.

Socks, it is held among manufacturers, represent probably the more complicated proposition in hosiery. They are a one-season item, in a way, a speculation for even the shrewdest buyers, an enigma for manufacturers and usually leave many heartaches for all interests. With production of specific types controlled by some organization of a character of which Infants' Socks, Inc., is a nucleus, it is held, much of the gamble might be eliminated and competition of jobbers and single unit retailers with chain stores deprived of features that have put jobbers at a disadvantage.

One of the troubles with the sock business for manufacturers more particularly is the tardiness of jobbers to contract and the appearance of new patterns after the lines have been opened for a season. It is these post-opening offerings that in recent years caused jobbers to defer buying, and afterward plunge when they could wait no longer and time for getting proper deliveries was becoming short. They bought late, as usual, for the current season, and lately have been unable, in many instances, to get acceptance of orders. Several mills might be mentioned as having not a case of socks in the last three months for a new account, and the needs of old customers were not, in many cases, taken care of, hence a desire on the part of some mills to open early for the 1930 distribution. Most factors prefer that the opening be not staged until along in August.

The question has arisen in relation to the contract of Infants' Socks, Inc., with the Fidelity Machine Company, where is the line of demarcation between an infants' size six and a children's size six? In conformity with that contract, the sock combination has the exclusive right to buy a certain type of the Fidelity multi-design machines for infants' socks only, from size one to 8½. But, as is commonly known in the trade, sizes run from six to ten in the classification children's hosiery. The Fidelity company therefore, foresees possibility of complications arising out of the contract over the question as to whether a given stocking of size six is to be considered an infant's or a children's size, and has asked the National Association of Hosiery and Underwear Manufacturers for an interpretation. The organization may have another nut to crack, for disposing of a size problem, since 8½ is a size in both children's and women's classifications and is liable to be an issue in interpreting contracts applying to hosiery construction.

In the matter of the Fidelity Machine Co. and Infants' Socks, Inc., contract, there appeared in the minds of some persons a doubt as to how it might apply to anklets, or half socks, which have turned out to be one of the year's more active items. It appears their larger sale is for children's wear, sizes ranging from six up to women's. The anklets are essentially a bare leg auxiliary, and the fact that women are reported not taking to them is accepted as meaning that very few females of mature years are going to appear stockingless. This is really comforting to the silk hosiery people, who for a time felt quite alarmed, and fear has not been wholly quieted.

Some of those holding conservative views on the subject of no stockings at times believe bare legs will prevail in the Summer camps, on the field of sports and in athletic games. They are looked for to be popular on the very occasions when more stockings are destroyed in a single day than in a few weeks' wear for dress. At the shore resorts in particular, it is predicted, stockings will be as scarce on the beach as in the surf and often found absent from the limbs of boardwalk paraders. It is a cruel picture of the Summer's business in hosiery that the alarmists are drawing, and it is heightened in effect by the admittedly enormous sales of anklets, already common among girls of high school age and up.

Westcott Mills Show a New Anklet Type, "Pencil Roll"

THE anklet with a roll top, a creation of the Westcott Hosiery Mills, is regarded in the trade as one of the more fetching innovations since the anklet fad first received serious consideration. It may have been suggested by the rolling of full length stockings for baring the leg and getting the sock effect, which proved very destructive to chiffon hosiery. Stockings rolled down to sock length were quite common on the campus at leading colleges, since they presented the two in one. But, complaints of damaged hose coming to mills for replacement, led to investigation, which revealed that in their haste the young misses often tore the fabric.

The Westcott "Pencil Roll" anklet produces a better effect than the rolled full length stocking and has the merit of being economical as well as sporty. A point in its favor is that it may be worn with equal effect with or without regulation hose. A Dalton, Ga., product, it is heralded as one of the more recent exemplifications of the success of southern mills in the flotation of new styles in hosiery.

Mill in Reading Introduces Fine Lisle Half Hose Number

THE Kitzmiller mill in Reading is presenting an ambitious half-hose number, designed to pass over the counter for $1.50 a pair. It is of 280-needle construction, knitted of very fine count French lisle—that is, a yarn spun in France. It is in plain colors and bears a close resemblance to silk, in both fineness of fiber and feel. Embroidered numbers of the lisle sock will be priced $2 a pair.

Selling direct to the retail trade, the Kitzmiller mill is featuring either solid colors or very subdued patterns, and is understood to have succeeded in produc-

ing some very clever effects by the use of sase in combination with other fibers, instead of confining its combinations to silk, rayon and cotton. Colors obtained in the dyeing of fabric containing several of the company's yarn combinations have been found to be fully as satisfactory as knitted patterns, and possess an advantage in that the manufacturer is spared the expense of machine special attachments. The company's plan for effecting the several colors is said to lend itself to the trend to the chaste in design. By the use of Sase, it is stated, a softness of fabric is obtained that provides a strong selling point.

Conditions in the markets for half-hose have improved considerably in the last month or two, so far as distribution is concerned. Sales are steady and a healthy volume is being maintained. In one respect the situation is not wholly satisfactory. When competition was sharper than in recent weeks prices got to a level where profits almost disappeared, and manufacturers find it difficult to improve upon them. Even in lines presenting a touch of individuality it is not easy to obtain commensurate rates, it is stated. Jobbers of some lines have increased their margin of profit at the expense of mills. Yet manufacturers distributing through jobbers do not much blame the latter for their resistance to values, as some of the direct-to-retailer mills are coming to be more severely competitive. Instances are given of such mills supplying retailers at prices very little above those which mills should have from jobbers.

Men's silk half-hose continues to be displaced by socks of combination yarn, the larger increases reported being in silk and rayon in combination, for the 50-cent price bracket, although in instances sold for 35 cents. Next in importance from the standpoint of greater consumption is the rayon-cotton combination. It appears noteworthy that, with hosiery production showing a decline, under the policy of curtailment, sales of combed half-hose show some gain, a few mills being fairly busy with this type of sock with reinforcement. Production of combed and carded appears to be pretty well centered in several groups of mills, which at the moment have probably a steadier market than that for women's silks.

Style to be Stressed in Men's Summer Underwear

THIS is about the period when manufacturers of men's light weight underwear are assumed to go through the formality of an opening for the ensuing season. When the matter was discussed with mill representatives in June all professed ignorance as to just when the opening might be staged, but there was general admission that some would be flirting with jobbers even before the dawn of July. Manufacturers have had a busy if not profitable season in knitted lines and are anxious to make the approach for 1930 while the flavors of a healthy market in 1929 still linger.

Some one, probably out to forestall any recessions from this season's closing prices, seems to have persuaded a few mill representatives to intimate increases might be possible. No one appears to have taken this talk seriously, in fact, one of the things not much

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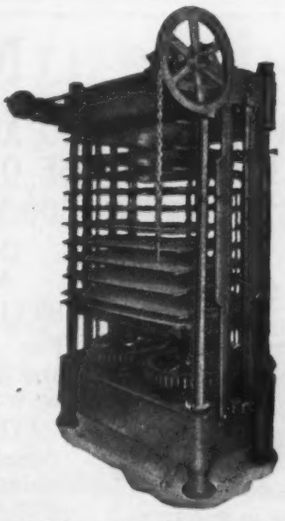

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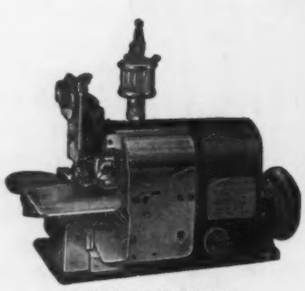

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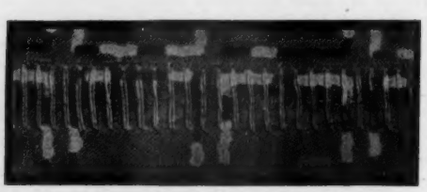

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16 LAUREL STREET, HARTFORD, CONN.

heard of is prices for the next season. Most factors would be content to go along on this year's program and indulge in no promises or forecasts calculated to disturb the frame of mind of buyers. Should there be a slow market about opening time, declines would be more likely than advances. It has not been forgotten that last years' opening of heavy weights caused something in the way of a jolt because of one large southern manufacturer naming lower heavy weight prices in a higher raw cotton market. From now on, the trade will be on the lookout for the unexpected, said a mill man from Alabama who was in the North quite recently.

There are surface indications of an intention on the part of several leading manufacturers to play up style in next year's light weights, and some interests believe the trade is going to have something to talk about besides knitted athletic shirts. They have been a wonderfully popular item and took up the slack in many a mill which put them in after discontinuing cotton lines that are on the way out. For example, it suited some of the manufacturers of women's cotton underwear very well to divert a part of their equipment to production of men's athletic shirts.

"So many mills are making the quick selling shirts that it is time to find something to take their place," it was suggested by a New York state mill chief, who entertains the fear that next year competition in the athletic shirts will be severely keen and the garments less profitable than this year. It is his thought, however, that whatever departure from the present cut be attempted, it will contemplate continued use of cotton. Rayon will figure more extensively for striping, it has been intimated, but when it comes to substituting rayon for cotton for the body of an undershirt, that will be found not so easy a matter. While various manufacturers are hinting at one thing and another in the way of style, none is revealing what his mill will show. But, that men's running pants and the general combination for next Spring will be a subject for more styling, and that a play is to be made on scantiness and gorgeousness for the better class men's shops, is regarded a foregone conclusion in trade circles.

Speaking of the opening of Summer weights, a manufacturer not satisfied with the narrow buying by jobbers in June, said he thought it would be a mistake to show samples before the middle of August. He expected some to be out before the end of July. Men's heavy weights, it is pointed out, are being so neglected by jobbers that, it was thought, not much was to be expected of any who take the time to look at light weight samples, even as late as August.

The market for women's cotton underwear went into a lull with the beginning of June, after mills had about finished with a fairly satisfactory light weight season. From the nature of inquiries for medium weights, several leading operators thought some business would be coming through in the latter part of July and that the outlook for fall orders was quite promising.

The first underwear for women to be marketed under the trade name Durene made its appearance in a few stores in June. Durene is the copyright name given to the mercerized yarn produced by a group of

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mercerizers who recently formed the Durene Association of America. Manufacturers using the yarns of members of the association are licensed to employ the name Durene in merchandising their product. The John Wanamaker Philadelphia store, one of the pioneers in presenting Durene underwear to the shopping public, described the fabric as made from super-mercerized yarn. The garments, in three styles, are conspicuous for brevity and are so formed as to leave as much of the body as possible exposed to the rays of the sun, for producing suntan. They are priced on a parity with good grade rayon underthings comparable in quantity of fabric and finish.

Brisk Finish for Swim Suit Season; Yarn Price Cut Hits Sweater Market

A SCARCITY of bathing suits was the outstanding phase of the situation marketwise in knitted outerwear in June. Jobbers and retailers for several weeks had been scouring the market places for fancy suits on the sunback cut. Manufacturers have been running plants overtime to capacity in an effort to make up for production that was lost by reason of jobbers deferring their buying until so late in the season. Some manufacturers had planned to open their 1930 lines by the middle of July, others intending to come on the market a month later. Some say they will "open when they are ready," which was interpreted as "when they feel jubbers are ready to contract." Last year's opening was in September; there was little buying before November, and not a whole lot then, say mill heads. The early birds hope to get jobbers interested more promptly this year, as they have had a bumper season.

Worsted spinners are charged by sweater manufacturers with having disturbed their market. Worsted yarns had been weakening for some time and were a subject of sharp price competition. Early in June a leading spinner lopped 2½ cents off the price, making it $1.35 for standard 2/20s high quarter blood. This was a decline of 12½ cents from the price to which spinners had adhered for some time, although shading for selective account. When the $1.35 price came out, and coincidentally the same count yarn out of lower grade wool was offered for $1.30, sweater mills sustained a jolt, in that jobbers expected a reduction in the per dozen price of the garments amounting to about six times the amount of the drop in the cost of the yarn content. And worse still, some insisted upon a rebate from the contract prices of sweaters still undelivered. There thus was caused some interruption of the conservative buying. Some mills are, however, operating to top speed on shaker knit coats and staples in sports lines, against orders taken before the disturbance caused by the revisions of yarn prices at an inopportune moment.

"Raw Silk and Throwing."

The McGraw-Hill Book Co., Inc., have recently published a book on Raw Silk and Throwing. The company claims that this book offers a very thorough treatise of the measuring, classifying and disposition of raw silk, of manufacturing efficiency in raw silk throwing and of the wage system and rates of production in this field. The book contains 200 pages. The price is $5.00 per copy and copies may be secured from the publishers, at 370 Seventh Ave., New York City, or through COTTON.

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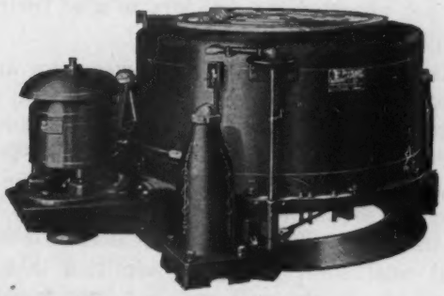

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The YARN MARKET

Philadelphia, Pa., June 15, 1929

IT will be remembered that the latter part of the last month reported here, the last report period ending May 20, presented somewhat better conditions for the yarn spinners and sellers than the first part of the month offered—that is, from a standpoint of turnover, for the price during this period was even lower than that of the previous month. These low prices somewhat curtailed the enthusiasm of the spinners and sellers, but it caused them to entertain visions of additional orders during the next two or three weeks.

Going into the first week of the present report period, the week beginning May 20, we find the supply of cotton for carded and combed yarns above the average in quality to be somewhat diminished. This, of course, has much to do with the flexibility of the yarn market, and this, along with the promise of increased firmness in cotton, gave the sellers encouragement enough to resist the efforts made by consumers to further depress prices. It was hoped by the spinners and sellers that the approach of the holiday during the next week might be one factor that the low prices could be attributed to, and that prices, along with demand, would increase after the holiday. Most consumers decided that they would rather wait until after the meeting of the spinners to be held at Atlantic City the following week to do their purchasing. It was with great anxiety that they awaited this meeting, for they expected the spinners to give their views of curtailment.

The first part of the second week saw an increase in inquiries over the week-end, but no gain was noted in the number of orders placed. Yarn sellers were optimistic enough to believe that this would follow. The Atlantic City meeting revealed little in the way of a change of conditions. Very few spinners were present and those who were there expressed little enthusiasm about conditions. They all admitted that they had their backs to the wall and that they would make no further concessions in prices. Inquiries continued to increase during the week, especially for carded yarns, and sellers claimed, that although no great increase in sales had taken place, a slight increase over the previous week was very evident. The buyers, however, still remained very cautious. A dip in cotton quotations failed to produce a corresponding dip in yarn quotations among the spinners, which more or less confirmed the previous statement made by spinners that they would make no more concessions in prices.

Conditions remained practically unchanged during the next week, and it was the opinion of many yarn men that the market would remain exceptionally quiet during the next two months. Several were of the opinion that if the spinners would shut down at least two weeks during July and run only four or five days weekly (day shifts only) from then until the last of August, the yarn branch of the industry would be in good shape to begin Fall and Winter operations and there would be an opportunity for some real profits to be realized by the producers. The next sixty days is regarded as a very crucial period in the yarn end of the industry by many.

The first part of the fourth week experienced the yarn sellers sticking closer to asking prices than they had during any part of the last month. It was believed that even a small increase in demand would prove stimulus enough to spur them on in an effort to raise prices. While it was not the opinion of many of the sellers or spinners that such an effort would meet with success, they did believe that the chances of the prices becoming more stabilized would be plausible enough to warrant their efforts. Talk of curtailment penetrated the market again the latter part of the week, and many eminent yarn experts claimed that if the spinners would, instead of seeking a sale at a low price in the New York market, adopt this policy, that their margins on yarn for delivery next Fall would be more adequately protected. They claimed that prompt and very drastic curtailment was necessary.

Philadelphia prices on June 15th follow:

Single Skeins.

4s to 8s	29 @29½	10s	30 @30½
12s	30½ @31	14s	31 @31½
16s	31½ @32	20s	33 @33½
24s	35 @35½	26s	36
30s	37		

Two-Ply Skeins.

8s	29½	10s	30½
12s	31	14s	31½
16s	32	20s	33½ @34
24s	35½ @36	26s	36 @36½
30s	37 @37½	40s	44 @45

Single Warps.

10s	30½ @31	12s	31 @31½
14s	31½ @32	16s	32 @32½
20s	33½ @34	26s	36½ @37
30s	37½ @38		

Two-Ply Warps.

10s	31	12s	31½
14s	32	16s	32½
20s	34 @34½	24s	36½
26s	37	30s	38
40s	45 @46		

Frame Spun Carded Yarn on Cones.

8s	28½ @29	10s	29½ @30
12s	30 @30½	14s	30½ @31
16s	31 @31½	18s	31½ @32
20s	32 @32½	22s	32½ @33
24s	34½ @35	26s	35 @35½
30s	37 @37½	40s	44 @45
30s dbl. carded	39 @39½	30s tying in	35½ @36

Carpet and Upholstry Yarn in Skeins.

8 and 9s 3-4 hard white warp twist	29½ @30
8s and 9s tinged tubes	28 @28½
8s 3-4 hard twist waste	27½ @28

Two-Ply Combed Peeler Skeins and Warps.

8s	44	20s	46
24s	51	30s	53 @54
40s	56½ @57½	50s	60 @62½
60s	68 @70	70s	78 @80
80s	90 @95		

Single Skein Peeler Yarn on Combs.

18s	41 @42	24s	45½
30s	50	36s	52 @53
38s	53 @54	40s	54 @55
50s	61½	60s	68½
70s	78½	80s	92

Mule Spun Carded Yarn on Cones.

10s	35	12s	35½
14s	36	16s	36½
18s	37	20s	37½
24s	39	26s	40
30s	41	40s	49

Mule Spun Combed Peeler Yarn on Cones.

10s	44	12s	45
14s	46	16s	47
18s	48	20s	50
22s	51	26s	52
28s	53	30s	54
36s	57	38s	59
40s	60		